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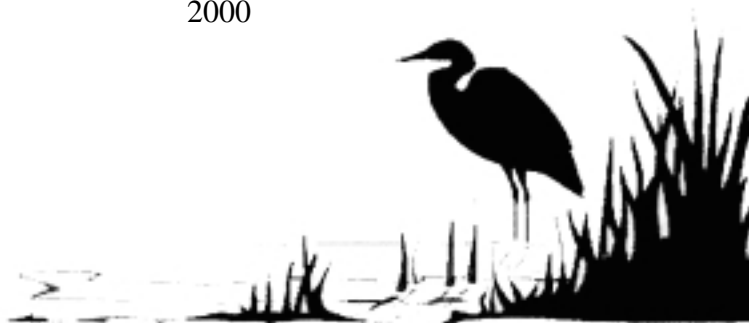
# LOUISIANA

## TOXICS RELEASE INVENTORY REPORT

# 1998

Prepared for the citizens of Louisiana  
by the  
Department of Environmental Quality  
based on information submitted pursuant to  
Section 313  
of the  
Federal Emergency Planning and Right-to-Know Act

11th Annual Edition  
2000



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Our sincere thanks to all who have shared in the completion of this publication. With your support, we look forward to another year as we continue in our commitment to the mission of this agency.

Linda M. Brown, Coordinator, Toxics Release Inventory Program  
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J. Dale Given, Secretary, Department of Environmental Quality



# State of Department of E

M.J. "MIKE" FOSTER, JR.  
GOVERNOR


June 1, 2000

Dear Readers:

The Department of Environmental Quality is pleased to announce the publication of the **1998 Louisiana Toxics Release Inventory**. This report is a key component of our overall mission to maintain a healthful and safe environment for the people of Louisiana.

With the release of this year's data, our state continues to show a downward trend in overall releases of toxic chemicals to the environment. This is a testament to our steadfast commitment to improving the environment. We recognize that our state is highly industrialized and that we must take full advantage of the available opportunity to continue the reduction of toxic releases. Industrial citizens must make every effort to ensure the protection of our environment, to voluntarily go above and beyond permitted limits, and must continue to focus on preserving a safe and healthful environment for all.

It has always been our commitment to support the public in understanding the report. As such, we shall continue to provide environmental information to the citizens of this state, thereby increasing their understanding and protection of our environment. Through our reorganization, we are better able to meet the needs of our citizens as we promote and achieve environmental protection throughout the state.

  
J. Dale Givens, Secretary  
Dept. of Environmental Quality

OFFICE OF THE SECRETARY P.O. BOX 82263

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## Foreword

The Louisiana Toxics Release Inventory (TRI) Annual Report has been published by the Department of Environmental Quality (DEQ) for the past eleven years. This report is a compilation of the data required under the Emergency Planning and Community Right-to-Know Act (ERCRA), Section 313. Facilities subject to reporting submit release and transfer information of listed chemicals to both the U.S. Environmental Protection Agency (EPA) and the state.

In July 1999, the Department of Environmental Quality (DEQ) was reorganized. The agency's new structure is based on function as opposed to environmental media offices. Under the new agency structure, TRI Program is located within the Office of Environmental Assessment, Environmental Evaluation Division. Based on the new organization, TRI data is utilized by the following:

- The Office of Environmental Services, Permits Department, reviews air data to identify potential new major sources of toxic air pollutants (TAPs) for regulation under Louisiana's TAP control program. TRI data is utilized as a Quality Assurance/Quality Control check for Toxics Emissions Data Inventory TEDI. TRI air emissions are also used to assist facilities in identifying Louisiana's major source facilities when developing Maximum Achievable Control Technology (MACT) standards mandated by the Clean Air Act Amendments of 1990. The Permits Division determines permit fees charged to facilities that discharge into state waters based on TRI data. The database is also used to compare listing in the Water Quality Inventory as required by Section 305(b) of the Clean Water Act (CWA). Section 303(b) of CWA requires states to submit to EPA a list of waters impaired by toxic pollutants, the facilities discharging to those waters and the amounts released.
- Within the Office of the Secretary (OSEC), the Special Projects Section uses the TRI data to track reduction initiatives in the Environmental Leadership Program. This is a voluntary program that encourages facilities to participate in pollution prevention programs by outlining voluntary reduction goals through the year 2000.
- Various state and federal agencies, industry, environmental activists, private citizens, attorneys, consulting firms, journalists, schools, and legislators are among the list of those who frequently request TRI data.



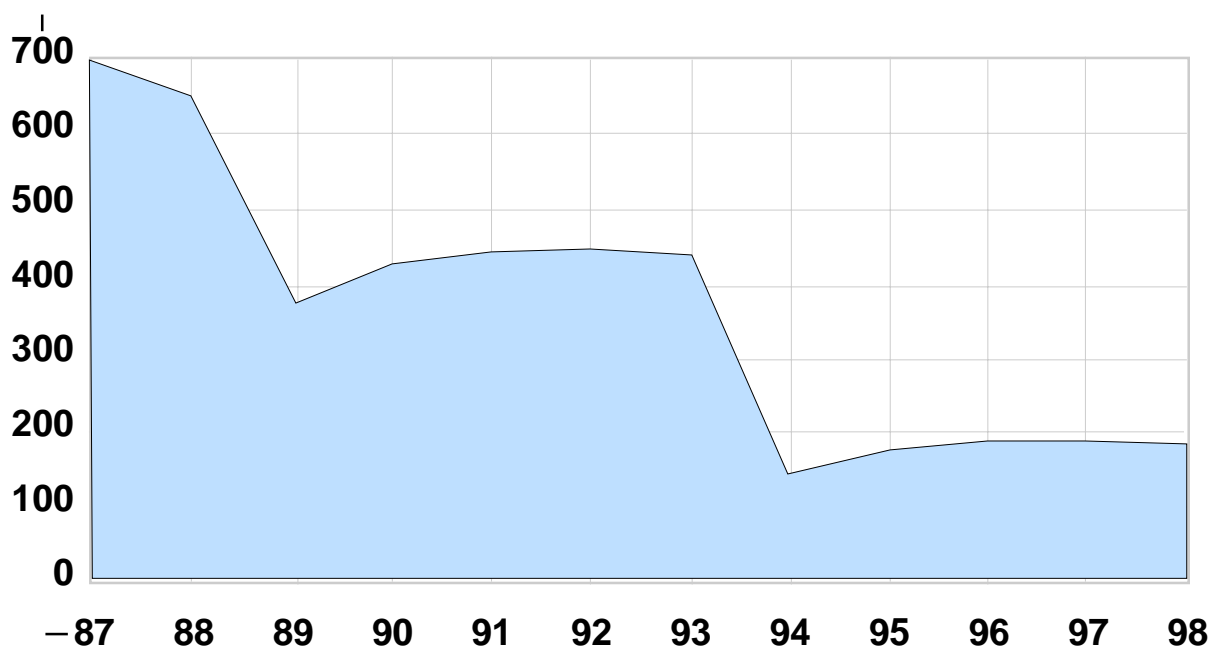
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# Louisiana At A Glance

The Louisiana 1998 Toxics Release Inventory (TRI) annual report indicates that the state remains on a downward trend in respect to the original facilities that began reporting in 1986. The report this year includes data for 327 facilities that submitted 2,292 forms, (including 107 certification statements). This year's data also includes 48 new facilities that reported for the first time as a result of the recent expansion of the TRI Program. In 1997, seven new industry sectors were added to the TRI Program. The reports were due in July 1999. Of these new Standard Industrial Classification (SIC) codes, the 48 new facilities represented SIC 4911, 4953, 5169, 5171, and 7389.

Based on the 1998 data, 186 million pounds in total releases was reported for the state. This figure includes all chemicals and all facilities (including the new SIC codes). The state showed a decline of 76% from 1987 for the original reporting facilities and a decline of 11% from 1997 data. Air releases for 1998 represented 40% of total releases (79 million pounds), water releases represented 20% (37 million pounds), on-site land releases represented approximately 9 % (16 million pounds), and underground injection accounted for approximately 29% (53 million pounds).

Leading parish in the state for all releases was Ascension Parish, with 19 facilities reporting over 50 million pounds. Leading facility in the state was PCS Nitrogen, which reported over 22 million pounds.



## CHAPTER 1

# TRI Overview

## 1.0 - Introduction

The Toxics Release Inventory is a database maintained by the state that provides information to the public concerning specific toxic chemicals released and transferred in Louisiana communities. The requirement, as set forth in the Emergency Planning and Community Act (EPCRA) (42 U.S. 11001 - 11050), mandates that certain facilities in the manufacturing sector provide toxic chemical release and transfer information to both the Department of Environmental Quality (DEQ) and United States Environmental Protection Agency (USEPA) for dissemination to the public. Louisiana remains steadfast in its commitment to making this information accessible to the public by various means.

## 1.1 - What is EPCRA?

On December 3, 1984, a tragic chemical accident, involving the release of methyl isocyanate, occurred in Bhopal, India. As a result of similar incidents occurring in the United States, Congress was prompted to enact Title III, the Emergency Planning and Community Right-to-Know Act (EPCRA), as part of the Superfund Amendments and Reauthorization Act (SARA) of 1986. Section 313 of EPCRA was established based on the principle that citizens have a “right to know” about releases of toxic chemicals in their communities.. This national database identifies facilities, the amounts of toxic chemicals released and managed on- and off- site in waste.

### Subtitles

**EPCRA** consist of three subtitles:

**Subtitle A:** Emergency Planning & notification

**Subtitle B:** Reporting Requirements (where Section 313 falls)

**Subtitle C:** General Provisions

Louisiana implemented the state’s first “Right-to-Know” law, Act 435, in 1985. When EPCRA was enacted in 1986, one of the requirements was the establishment of an Emergency Response Commission, which was appointed by each state’s governor. The commission would be responsible for implementation of a hazardous materials information system regarding Community Right-to-Know. The Legislative Session of 1987 amended the Louisiana Right-to-Know Act with Act 347, in an effort to resolve conflicts existing between the state and federal laws.



The Louisiana Emergency Response Commission operates within the Department of Public Safety and Corrections, which is the primary entity for SARA and the state right-to-know responses. In 1988, the governor designated the Department of Environmental Quality (DEQ) as the state agency responsible for implementing the reporting requirements of Section 313, Toxics Release Inventory. Henceforth, owners and operators of certain manufacturing facilities subject to Section 313 reporting, should submit their toxic chemical release forms to this agency.

The TRI database changes constantly due to changes in reporting requirements and to revisions submitted by facilities on a regular basis. Consequently, data retrieved from the system on different dates may create discrepancies between customized reports and the annual publication. However, the agency's goal remains to provide the most accurate and up-to-date information upon request.

## 1.2 - Who Must Report?

A manufacturing facility is required to report if it meets **each** of the following criteria:

**1. It has 10 or more full time employees.**

Full-time means a person is employed for 2,000 hours or more per year.

**2. It is included in the Standard Industrial Classification Codes 20 through 39, is a federal facility, or is included in one of the following industry sectors:**

SIC code 10	Metal mining (except 1011, 1081, 1094)
SIC code 12	Coal mining (except 1241)
SIC codes 4911, 4931, 4939	Electric utilities
SIC code 4953	Commercial hazardous waste treatment facilities
SIC code 5169	Chemical and Allied products, wholesale
SIC code 5171	Petroleum bulk terminals
SIC code 7389	Solvent recovery services

Every company doing business is identified by a four-digit number called the Standard Industrial Classification (SIC) Code. The first two numbers identify the major business sector and the last two numbers define the specialty within the major sector.

3. **It manufactured or processed a reportable toxic chemical in quantities exceeding 25,000 pounds, or it otherwise used more than 10,000 pounds of a reportable toxic chemical that calendar year.**

The term “manufacture” means to produce, prepare, compound, or import a listed Section 313 toxic chemical. The term “process” means the preparation of a listed Section 313 toxic chemical, after its manufacture, for distribution in commerce.

The term “otherwise used” encompasses any activity involving a listed Section 313 toxic chemical at a facility that does not fall under the definitions of “manufacture” or “process”. A chemical that is otherwise used by a facility is not intentionally incorporated into a product distributed in commerce.

### ***1.3 - How Is It Reported?***

A toxic chemical release inventory form or Form R must be filed for each listed chemical that is manufactured, processed or otherwise used above the threshold limits in a calendar year. The Form R contains information such as:

1. The facility’s physical address;
2. The person to contact about the reported information;
3. The facility’s specific permit numbers;
4. On-site uses of the chemical being reported;
5. The maximum amount of the chemical which was on-site;
6. The estimated amount of the chemical released into the environment by media;
7. Quantity released due to remedial actions, catastrophic events, or one-time events not associated with production processes;
8. Names and addresses of Publicly Owned Treatment Works (POT’s) and other off-site locations and the amount of chemicals sent for the purpose of recycling, energy recovery, treatment, or disposal;
9. The on-site waste treatment methods and efficiency;
10. The on-site recycling and energy recovery processes;
11. Production ratio and activity index; and
12. Source reduction activities.

Facilities located in Louisiana must submit Form R on a per-chemical basis to EPA and DEQ by July 1st. The collection of TRI data begins January 1 and continues through December 31 of the reporting year. The data is then submitted to both agencies on

or before July 1st of the following year and made available to the public approximately 6 to 8 months later.

In lieu of a Form R, a facility may submit a Form A or certification statement on a per-chemical basis. When a Form A is submitted instead of a Form R, a facility certifies it did not exceed the alternate threshold of 1 million pounds for the specified chemical and the release amount to be reported was less than 500 pounds.

Form R provides estimated quantities of toxics released into the air, water, underground injection wells and land environments. A facility is not required to initiate any new monitoring or take any additional measurements to determine the amount of chemical released. The law requires facilities to base TRI reports on measurements and monitoring data when these are available; however, if such data is not available, the amounts are estimated based on published emission factors, mass balance calculations or engineering judgment.

## 1.4 - An Explanation of On-Site and Off-Site Releases

A release is the discharge of a toxic chemical to the environment. On-site releases include emissions to the air, discharges to the bodies of water, releases at the facility to land, as well as into underground injection wells. Chemicals in waste transferred off-site for disposal are also released to the environment. On- and off-site releases thus include releases to the environment at the facility (reported in Section 5 for Form R) plus off-site transfers for disposal (reported in Section 6 of Form R).



Air

**Air Emissions:** Releases to air are reported either as *point source or fugitive emissions*. Point source emissions, also referred to as stack emissions, occur through confined air streams, such as stacks, vents, ducts, or pipes. Fugitive emissions include equipment leaks, evaporative losses from surface impoundments and spills, and releases from building ventilation systems.



Water

**Surface Water Discharges:** Releases to water include discharges to streams, rivers, lakes, oceans, and other bodies of water. This included releases from contained sources, such as industrial process outflow or open trenches. Releases due to runoff, including stormwater runoff, are also reportable to TRI.



Underground  
Injection

**Underground Injection:** Underground injection is the subsurface emplacement of fluids through wells. TRI chemicals associated with manufacturing, the petroleum industry, mining, commercial and service industries, and Federal and multiple government related activities may be injected into Class I, II, III, VI or V wells, if they do not endanger underground sources of drinking water (USDW), public health or the environment. The different types of authorized injection activities are described below:

- Class I** industrial, municipal and manufacturing wells inject fluids into deep, confined and isolated formations below potable water supplies.
- Class II** oil and gas related wells, which re-inject produced fluids for disposal, enhanced recovery of oil, or hydrocarbon storage.
- Class III** wells associated with the solution mining of minerals.
- Class IV** wells may inject hazardous or radioactive fluids directly or indirectly in USDW, only if the injection is part of an authorized CERCLA/RCRA clean up operation.
- Class V** wells which include all types of injection wells that do not fall under Class I-V. They may inject only if they do not endanger USDW, public health or the environment. Class V wells are generally, shallow drainage wells, such as floor drains connected to dry wells or drain fields.

Beginning with the 1996 reporting year, facilities separately report amounts injected into Class I wells and into all other wells.



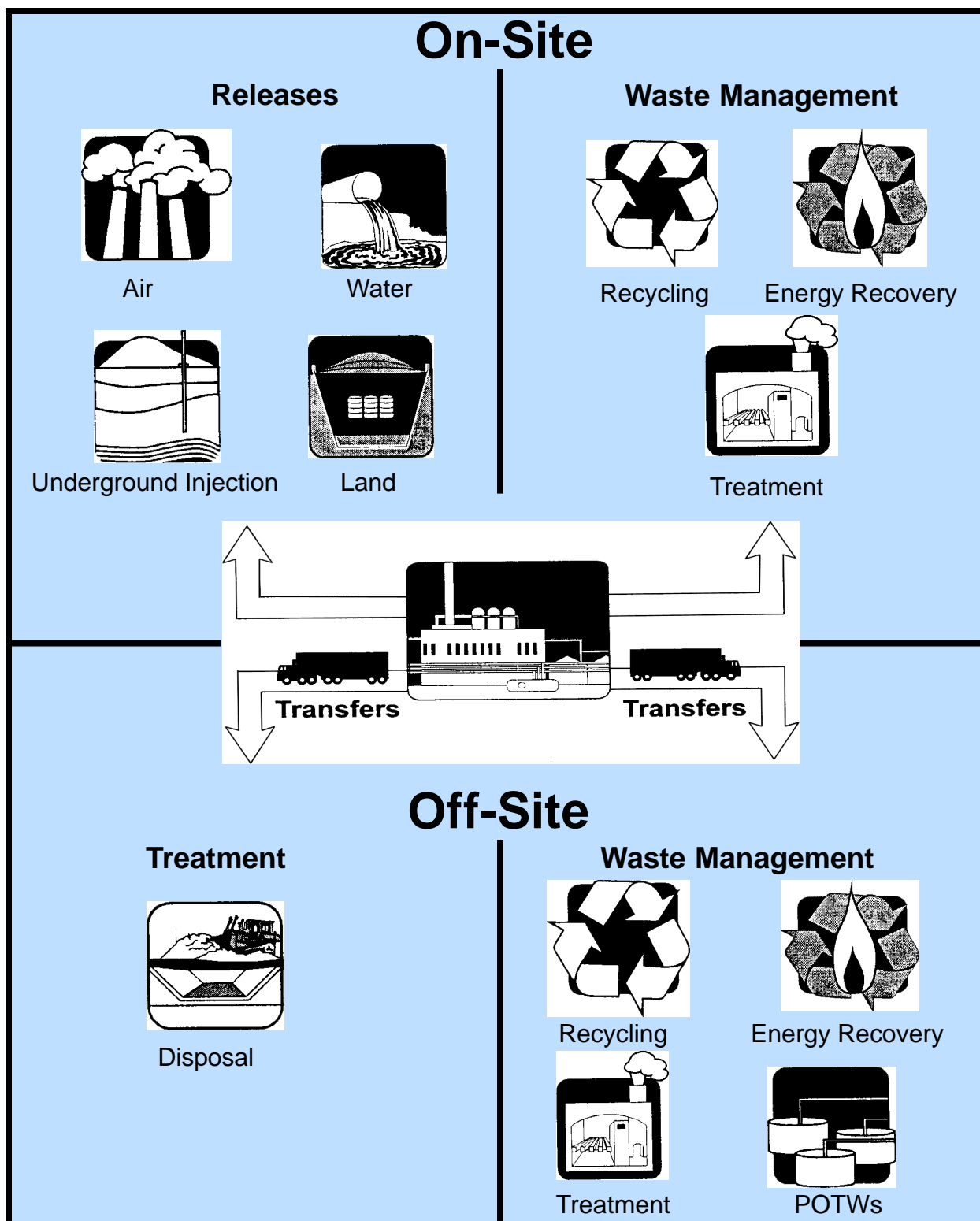
Land

**On-site Land Releases:** On-site releases to land occur within the boundaries of the reporting facility. Releases to land include the following: disposal of toxic chemicals in landfills (in which wastes are buried); land treatment/application farming (in which waste containing a listed chemical is applied to or incorporated into soil); surface impoundments (which are uncovered holding areas used to volatilize and/or settle waste materials); and other land disposal methods (such as waste piles) or releases to land (such as spills or leaks). Beginning with the 1996 reporting year, facilities separately report amounts released to RCRA Subtitle C landfills from amounts released to other on-site landfills.



## Transfers

**Transfers Off-site to Disposal:** Toxic chemicals in waste that are transferred to a facility for disposal generally are either released to land at an off-site facility or are injected underground.



## 1.5 - How Has The TRI Chemical List Changed?

With the enactment of EPCRA in 1986, the TRI list of reportable chemicals consisted of 300 chemicals and 20 chemical categories. Under the provisions of Section 313(d)(2), EPA is authorized to add chemicals to the list based on any of the following three criteria:

- a) The chemical is known to cause, or can reasonably be anticipated to cause, significant adverse acute human health effects;
- b) The chemical is known to cause, or can reasonably be anticipated to cause in humans, chronic health effects such as cancer, reproductive dysfunction, etc.; or
- c) The chemical is known to cause, or can reasonably be anticipated to cause, a significant adverse effect on the environment.

### Added Chemicals

Between 1988 and 1994, the following chemicals were added to the list of reportable chemicals:

Ally alcohol	Bromochlorodifluoromethane (Halon 1211)	Acetophenone
Creosote	Bromotrifluoromethane (Halon 1301)	Amitrole
2,3-Dichloropropene	Dibromotetrafluoroethane (Halon 2402)	Bis (2-chloroethoxy) methane
m-Dinitrobenzene	Dichlorodifluoromethane (CFC-12)	1,4-Dichloro-butene
o-Dinitrobenzene	Dichlorotetrafluoroethane (CFC-114)	Dihydrosafrole
p-Dinitrobenzene	Monochloropentafluoroethane (CFC-115)	Ethylene bisdithiocarbamic acids, salts and esters
Dinitrotoluene (mixed isomers)	Trichlorofluoromethane (CFC-11)	Ethylidene dichloride
Isosafrole	Chlorodifluoromethane (HCFC-22)	Formic acid
Toluene diisocyanate (mixed isomers)	Dichlorotrifluoroethane (HCFC-123) and isomers	Hexachlorophene
Paraldehyde	Chlorotetrafluoroethane (HCFC-124) and isomers	Malononitrile
Pentachloroethane	1,1 Dichloro-1-fluoroethane (HCFC-141b) and isomers	Methacrylonitrile
Pronamide	1-Chloro-1,1-difluoroethane (HCFC-142b)	Methyl chlorocarbonate
Thiram	1,1,1,2-Tetrachloroethane	2-Methylpyridine
Trypan blue		5-Nitro-o-toluidine
		Warfarin and salts

Added  
Chemicals

The next major change of chemicals to the TRI list occurred with the addition of 282 chemicals, including 160 pesticides in early 1995. Of this addition, the chemicals reported in Louisiana are as follows:

1,2,3-Trichloropropane	Cyanazine	Ozone
1,2,4-Trichloropropane	Cycloate	Permethrin
1,2-Phenylenediamine	Dicyclopentadiene	Phenanthrene
1,3-Phenylenediamine	Diisocyanates	Piperonyl butoxide
2-Mercaptobenzothiazole	Diphenylamine	Polycyclic aromatic compounds
2-Methylacetonitrile	Dinitrobutyl phenol	Propargyl alcohol
Ametryn	Dimethylamine	Simazine
Atrazine	Ethyl dipropylthiocarbamate	Sodium nitrite
Boron trifluoride	Fluorine	Triethylamine
Bromine	N,N-Dimethylformamide	n-Hexane
Carbofuran	N-Methyl-2-pyrrolidone	Trans-1,3-Dichloropropene
	Nitrate compounds	

Deleted  
Chemicals

Section 313(d)(3) provided the authority to delete chemicals from the TRI list. A chemical may be deleted if EPA determines that there is not sufficient evidence to establish any of the criteria described on the previous page. The chemicals deleted from the TRI list as of December 1996 are identified below:

Acetone*	Di(2-ethyl hexyl) adipate (DEHP)
Ammonium nitrate (solution)*	Diethyl phthalate (DEP) *
Ammonium sulfate (solution)*	Di-n-octyl phthalate (n-dioctyl phthalate)
Barium sulfate (barium compounds)	High molecular weight glycol ethers were deleted from the glycol ethers category by redefining the category to exclude such chemicals
Butyl benzyl phthalate	Melamine
Color Index (C.I.) Acid blue 9 diammonium	Sodium hydroxide (solution)*
Copper phthalocyanine compounds Substituted with only bromine, chlorine, and/or hydrogen (copper compounds)	Sodium sulfate (solution)*
C.I. Acid Blue 9/disodium salt	Terephthalic acid
*Deleted chemicals reported by Louisiana facilities.	Titani
	Titanium dioxide

Modified  
Chemicals  
Listings

EPA has also modified the listing of a specific form of some of the reportable chemicals. The modified chemical listing are identified below:

Aluminum oxide (bifrous forms)
Ammonia (includes anhydrous ammonia and aqueous ammonia from water, dissociable ammonium salts, and other sources: 10% of total aqueous ammonia is reportable under this listing)
Hydrochloric acid (acid aerosols including mists, vapors, gas, fog and other airborne forms of any particle size)
Sulfuric acid (acid aerosols including mists, vapors, gas, fog and other airborne forms of any particle size)

## **1.6 - What Are The Benefits and Limitations of TRI Data?**

### Benefits

The primary focus of the TRI program is to provide public access to toxic chemical release and transfer data at the local, state, regional, and national level. Responsible use of the data can help the public identify potential environmental concerns, gain better understanding of potential risks, and work with industry and government to reduce toxic chemical releases and the risks associated with them. Citizen groups have used TRI data as a tool to open the lines of communication with industrial neighbors to develop goals toward a healthier community.

Federal, state, and local governments can use the data to compare facilities or geographic areas, to identify areas of concern, to evaluate existing environmental programs, to more effectively set regulatory priorities, and to track pollution control and waste reduction progress. TRI data in conjunction with demographic data, can assist government agencies to identify potential environmental justice concerns.

Industry can use the data to obtain an overview of releases and management of toxic chemicals, identify areas to reduce costs in the management of toxic chemicals in waste, establish reduction targets and monitor progress toward reduction goals. Communities and industry are pulling together to reduce environmental and human health risks associated with toxic chemical releases.

### Limitations

TRI data is a key source of environmental information. However, there are some limitations that must be considered when using the data. Prior to 1998, the program only targeted manufacturing and federal facilities as the reporting entities. Although a recent expansion of the program brought in additional facilities (industries providing energy, further managing of products, or further managing of waste from the manufacturing sector), it still does not cover all sources of releases and other waste management activities. The program does capture a significant portion of toxic chemicals, but it does not cover all industry sectors. Facilities that do not meet the employee or quantity threshold do not report.

Reporting under the current TRI program does not capture information on toxicity of the chemicals and information on the life cycle of the chemicals is limited. Mobile and agricultural sources are not covered by the program, as well as releases from volatile organic compounds, and many other non-industrial sources.



### Limitations

Another limitation in using TRI data is that facilities report estimated data. They are not required to perform any additional monitoring and are allowed to utilize various estimation techniques. Variations within industry sectors may result from the use of different estimation techniques (estimation guidance has been published by EPA). Users should be mindful of this limitation when considering data accuracy and comparability.

Users should also be mindful that release estimates alone are not enough to determine exposure or to calculate the risk of adverse effects on human health.

Factors to consider in using TRI data include:

### Factors to consider

#### **TOXICITY OF THE CHEMICAL -**

small releases of highly toxic chemicals may pose greater risks than large releases of less toxic chemicals;

#### **EXPOSURE -**

the potential for exposure increases the longer the chemical remains unchanged in the environment. Some chemicals may quickly break down into simpler, less toxic forms. Others may accumulate in the environment, becoming a potential source of long-term exposure;

#### **TYPE OF RELEASE -**

chemical exposure of a population depends on the environmental medium (air, water, land, etc.) where the chemical is released. The medium also affects the type of exposures possible, such as inhalation, dermal exposure, or ingestion.

In addition to the above, individual characteristics (age, sex, family traits, life style, etc.) are other factors to consider when trying to assess how chemicals affect us.

## **1.7 - Common Uses of TRI Data**

While the public may be familiar with utilization of the data by several programs within DEQ, we thought it helpful to provide the following brief descriptions as to how others outside DEQ may use TRI data.

### Academic Uses

The annual report provides the academic community with a wealth of invaluable information, particularly for students involved in various environmental projects. As a resource tool, the report also provides listings where additional information may be acquired.

Since the annual TRI reports have been released, the academic community has taken advantage of its data and helped to disseminate that information to the public. University researchers use TRI data in a variety of ways to conduct studies on the environment. The institutions themselves are valuable sources of information. For example, Federal Depository Libraries within designated regional university libraries provide free access to TRI data.

Some of the typical “academically oriented” uses of the annual TRI report are summarized below.

- Identify the amount of specific chemicals which reporting facilities produce and/or release in surrounding communities.
- Identify which type of industry may be located in a specific community.
- Identify which chemicals may have potential impact on surrounding communities.
- Provide talking points at environmentally-related community forums/gatherings.
- Assists in the establishment of beneficial industrial contacts with respect to technological advances.
- Assists in determining “best” sampling site selection for environmental projects
- Aids in identifying environmental justice issues/concerns. For example, Louisiana State University, Southern University, the University of Oregon, University of California at Davis, University of Arizona, Vanderbilt, and other academia have used TRI data to research the link between socioeconomic status and industrial hazardous chemical sites and emissions.

State  
Institutions

Other examples of state institutions engaged in the analysis and dissemination of environmental information are as follows:

- The Centers for Disease Control and Prevention (CDC) recently designated the **Tulane University of Public Health and Tropical Medicine** as one of the CDC Prevention Research Centers for Environmental Diseases. Its purpose will be to develop basic exposure and health regional profiles to research and address environmental health concerns.
- The **Tulane/Xavier Center for Bioenvironmental Research (CBR)** conducts innovative research in a partnership with faculty, students, and other agencies. Current efforts are focused on the Mississippi River, women's health, ecosystem research, and biomonitoring/bioremediation.
- In the Fall of 1999, **Louisiana State University** began an environmental research cooperative which will use the expertise of both the university and the community to address various issues. The Environmental Council, made up of 100 faculty members, will consist of 4 working groups: planning & policy, science, health, and technology. Another proposed element of the cooperative will seek requests for information from the community and attempt to research and resolve environmental concerns. A related course curricula for university students is also planned.

## 1.8 - What's New In TRI?

Persistent,  
Bioaccumulative  
Toxic Chemicals  
(PBTs)

On October 29, 1999 EPA finalized a rule (*Federal Register*, Vol. 64, No. 2) that lowered the reporting thresholds for a certain group of chemicals termed *Persistent Bioaccumulative Toxic Chemicals* (PBTs). The rule also provided for a special, lower reporting threshold for dioxin and dioxin-like-compounds. The rule added certain other PBT chemicals to the TRI list. These chemicals persist in the environment and accumulate in biological organisms for long periods of time. These characteristics of persistence, bioaccumulation, and toxicity may pose potential risks to human health and the environment. Before the final rule, Section 313 reporting thresholds for manufacture or process were 25,000 pounds and 10,000 pounds for otherwise use. EPA believed that these thresholds were inadequate to ensure that the public had access to important information regarding the quantities of these PBT chemicals that enter into communities. By lowering the threshold to 10 to 100 pounds, the public would be provided access to environmental data regarding these chemicals.

## Louisiana Toxics Release Inventory Report - 1998

### TRI Additions

Seven chemicals and two chemical categories were added to the list of TRI chemicals. The added chemicals and chemical categories are as follows:

#### **CHEMICALS:**

Benzo(g,h,i) perylene  
Benzo (j,k) fluorene (fluoranthene) (as a member of the PACs category)  
3-methylcholanthrene (as a member of the PACs category)  
Octochlorostyrene  
Pentachlorobenzene  
Tetrabromobisphenol A (TBBPA)  
Vanadium (except when contained in an alloy)

#### **CHEMICAL CATEGORIES:**

Vanadium compounds  
Dioxin and dioxin-like compounds (manufacturing; and the processing or otherwise use of dioxin and dioxin-like compounds are present as contaminants in a chemical and if they were created during the manufacturing of that chemical.)

### Thresholds

EPA lowered the reporting threshold for the following 18 chemicals and chemical categories that meet the criteria for persistence and bioaccumulation.

#### **CHEMICALS AND CHEMICAL COMPOUNDS:**

Aldrin \*\*\*  
Benzo(g,h,i) perylene \*\*  
Chlordane\*\*  
Dioxin and dioxin-like compounds (manufacturing; and the processing or otherwise use of dioxin and dioxin-like compounds if the dioxin and dioxin-like compounds are present as compounds are present as contaminants in a chemical and if they were created during the manufacturing of that chemical)\*  
Heptachlor\*\*  
Hexachlorobenzene\*\*  
Isodrin\*\*  
Methoxychlor\*\*\*  
Octachlorostyrene\*\*  
Pendimethalin\*\*\*  
Pentachlorobenzene\*\*  
Polycyclic aromatic compounds category\*\*\*  
Polychlorinated biphenyl (PCBs)  
Tetrabromobisphenol A\*\*\*  
Toxaphene\*\*  
Trifluralin\*\*\*  
Mercury\*\*  
Mercury compounds\*\*

\* Threshold lowered to 0.1 gram

\*\* Threshold lowered to 10 pounds

\*\*\* Threshold lowered to 100 pounds

Additional  
Information

Included in the final rule for PBT's was the elimination of the *de minimus* exemption and eligibility for the alternate threshold for these chemicals. The rule also included elimination of range reporting for on-site releases and transfers off-site for further waste management. **This final rule is effective for reporting year 2000.** (Facilities subject to reporting will collect data from January 1, 2000, to December 31, 2000. Reports should be submitted to EPA and the state on or before July 1, 2001.) Additional information on the final rule and reporting under EPCRA Section 313 are accessible from the EPA website: <http://www.epa.gov/tri> or by contacting the EPCRA Hotline toll free at 1-800-535-0202; in Virginia and Alaska at (703) 412-9877 or toll free TDD at 1-800-553-7672.

Lead and  
Lead Compounds

In August 1999, EPA proposed a rule to lower the reporting thresholds for lead and lead compounds. EPA believes that lead and lead compounds are persistent, bioaccumulative toxic chemicals to which the lower reporting threshold should apply. The proposed rule also includes: a) a limitation on the reporting of lead when contained in certain alloys; b) elimination of the *de minimus* exemptions for lead and lead compounds; c) elimination of the alternate threshold and Form A eligibility for lead and lead compounds; and d) elimination of range reporting for on-site releases and transfers off-site for further waste management. The comment period for this proposed rule expired on December 16, 1999. Additional information on the proposed rule is accessible at the address and phone numbers mentioned in the previous paragraph.

Phosphoric Acid

On December 7, 1999, EPA proposed a rule to delist phosphoric acid from the reporting requirements under EPCRA Section 313 and Section 6607 of the Pollution Prevention Act of 1990. The delisting is the result of a court decision that reversed EPA's denial of a petition filed by The Fertilizer Institute (TFI), in which TFI requested that phosphoric acid be deleted from the TRI chemical list. The comment period for this proposed rule expired on February 7, 2000. (As of this writing, the final rule has not been published.)

In Louisiana, phosphoric acid is the top ranked chemical based on releases reported under EPCRA Section 313. The fertilizer industry is the largest contributor of No. 11 phosphoric acid releases. The delisting of this chemical will significantly reduce the total releases reported in the State, particularly in water releases, where 95% of all phosphoric acid releases are reported.

## **1.9 - Louisiana Small Business Environmental Assistance Program (SBAP)**

The Louisiana Small Business Environmental Assistance Program (SBAP) was established in 1992 within the Department of Environmental Quality's (DEQ) Office of Air Quality and Radiation Protection, as a result of the Federal Clean Air Act Amendments of 1990. For the first time, these amendments placed environmental regulations on a wide range of small businesses. Realizing that many of these small businesses lack both the technical expertise and the financial resources to comply with these new regulations, Congress mandated that all states develop and administer programs for the permitting of air pollution sources. These SBAPs provide the services of an environmental technical advisor to qualifying businesses.

Louisiana has taken the lead in EPA's new mission in changing its approach to environmental compliance from one of deterrence, the "first generation", to a more cooperative approach, the "second generation". Its SBAP is a **NON-ENFORCEMENT** program and is already pioneering the way toward a partnership approach, working with and teaching small business owners in environmental compliance, pollution reduction, and accident prevention. The program also provides assistance in interpreting complex federal and state regulations and giving guidance on how to comply with them, calculating emissions, preparing environmental permit applications or exemptions, and in negotiating lower permit fees, thus encouraging emission compliance. Since its inception, the SBAP has assisted several thousand small businesses throughout the state.

DEQ's SBAP technical staff is one of three components of the program. The technical staff is comprised of engineers assigned to all regions of the state along with a support group at DEQ headquarters. The other two components are the Small Business Ombudsman (SBO), and the Louisiana Small Business Compliance Advisory Panel (CAP), which is composed of seven representatives of small businesses and the general public appointed by the Governor and the state legislature, DEQ, and the Department of Economic Development (DED). The CAP acts as the overseer of the SBAP program and reviews technical documents for small businesses.

SBAP

The SBAP co-hosts seminars and panel discussions with the Ombudsman, trade associations and industry groups throughout Louisiana to help business owners keep abreast of regulations and to network with other owners of similar businesses. A quarterly newsletter notifies businesses of upcoming workshops, announces pending regulations, and relays information on such issues as pollution and accident prevention, compliance deadlines and regulatory hearings.

There are an estimated 12,000 small businesses in Louisiana that will be impacted by the 1990 Clean Air Act Amendments. Any source which emits or has the potential to emit any air contaminant is required to have either an air permit or an exemption. This requirement was previously overlooked for many small businesses, but this is no longer the case. A small business owner is responsible for his facility's environmental compliance, which includes obtaining the appropriate permits or exemptions. Permits or permit exemptions must be obtained prior to new construction in order to avoid penalties or fines which may be levied against those who fail to comply with this requirement.

Any small business owner wishing to participate in the Small Business Assistance Program must meet the following criteria: employ 100 or fewer employees, be independently owned and not dominant in its field, emit less than 50 tons per year of any one regulated pollutant and less than 75 tons per year (total) of all regulated pollutants, and not be classified as a major stationary source.

For further information, contact:  
DEQ Small Business Toll-Free Hotline  
1-800-259-2890

OR

Visit the web site:

<http://www.deq.state.la.us/assistance/sbap>

## **1.10 - Chemical Accident Prevention Program (CAPP)**

The Department of Environmental Quality (DEQ) has been focusing its efforts to protect the public and the environment by prevention of accidental releases of chemicals, planning for emergency response, and corrective action in the event of a release. The DEQ recognizes that proper chemical accident prevention and preparedness are vital components of effective environmental emergency response planning in Louisiana because of the number of chemicals produced and handled in the state. Therefore, the state established its own program, Chemical Accident Prevention Program (LAC 3:III Chapter 59) to reflect federal program rules (40 CFR Part 68) created in the wake of a 1984 disaster in Bhopal, India and a 1985 accident in West Virginia.

This Chemical Accident Prevention rule requires all large companies and small businesses that handle any of the 141 listed regulated substances above the threshold quantity, to maintain a current registration with the state Chemical Accident Prevention Program, and then submit a risk management plan to the Environmental Protection Agency (EPA). This program builds on the existing community right-to-know program (SARA Title III or EPCRA) which requires companies to submit chemical information to state and local governments. Under the chemical accident prevention program, businesses will be required to implement safe business practices and communicate any hazards to the surrounding community. Responders and local officials will utilize the information provided by the facilities in their risk management plans to prepare and respond to chemical accidents.

Companies that are subject to the rule were required to submit a Risk Management Plan (RMP) to EPA by June 21, 1999. The content of the RMP depends on the type of facility, its history, and its potential for an environmental or a health impact. Companies must document their five-year accident history of serious accidents, analyze worst-case and alternate case releases, and coordinate with local emergency responders.

These Risk Management Plans are now available to the public (without Off-Site Consequence Analysis data) at [www.epa.gov.9966srmpdcd/owa/overview/startup](http://www.epa.gov.9966srmpdcd/owa/overview/startup) The Chemical Safety Information, Site Security and Fuels Regulatory Relief Act restricts public access to data by granting a one year suspension from Freedom of Information Act (FOIA) for such data. However, citizens may request information directly from the facility. Additionally, each company must conduct a public meeting to inform citizens of the chemicals present at the site, the facility's daily operations and safety practices.



After the June 21, 1999 deadline, EPA transmitted all Louisiana RMPs to CAPP for review, auditing, and enforcement activities. Currently, the CAPP has received 336 RMPs and has initiated audits and enforcement actions to maintain compliance. Additionally, there are 2210 facilities that have reduced their chemical quantities below the threshold amount or changed their chemical processes in order to reduce risk. However, these facilities do not have to submit a risk management plan but they are required to comply with the federal and state General Duty Clauses.

The General Duty Clause requires owners and operators of stationery sources producing, processing, handling or storing of chemicals to perform the following three functions:

- A. Identify hazards that may result from accidental releases of such substances using appropriate hazard assessment techniques.
- B. To design and maintain a safe facility.
- C. To minimize the off-site consequences of accidental releases of such substances that do occur.

The Chemical Accident Prevention Program will continue to work with Local Emergency Planning Committees, fire departments, local officials, businesses and the surrounding communities to ensure safe handling of chemicals. Proper chemical accident prevention and preparedness will ensure protection of Louisiana citizens and a healthy environment.

For more information contact:  
Louisiana Department of Environmental Quality  
Chemical Accident Prevention Program  
(225) 765-0144 or (225) 765-0166

**OR**

Visit the web page:

<http://www.deq.state.la.us/surveillance/accprev/index.htm>

**OR VISIT**

Environmental Protection Agency  
Chemical Emergency Preparedness and Prevention Office:

<http://www.epa.gov/swercepp/index.html>

## **1.11 - Environmental Justice In Louisiana**

Environmental Justice is the “fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.”  
- EPA’s Office of Environmental Justice.

The issues of Environmental Justice began to develop following a 1987 United Church of Christ study on Environmental Racism. This study concludes that minorities were much more likely than whites to live near hazardous waste sites. Although the findings of the United Church of Christ’s report are disputed, it is unquestionable that its release brought the Environmental Justice issue to the forefront of environmental permitting, regulation, and enforcement.

Environmental Justice has expanded throughout the 1990s. In 1994, President Clinton issued an executive order (Exec. Order No. 12,898, 3 C.F.R. 859 (1995)), mandating all federal agencies to make it part of their mission to achieve Environmental Justice. In addition, the growing use of Title VI of the Civil Rights Act of 1964 to advance Environmental Justice complaints has brought increased attention to the Environmental Justice issue. Title VI provides that “no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.” Today, the issue of Environmental Justice has become a complex and integral part of environmental regulation.

Louisiana continues to promote Environmental Justice. The LDEQ Community-Industry Relations Group works with communities, individuals, industries, and other interested parties to address and resolve Environmental Justice-related concerns. The Community-Industry Relations Group has revived its successful “Environmental Justice Panel” (now called “Community-Industry Panel”) project in the St. Charles Parish community of Norco. The LDEQ Community-Industry Relations Group hopes to revive the panel process in other Louisiana communities.

In 1998, Governor Foster recognized the need to examine Environmental Justice-related issues in greater detail. To accomplish this, the Governor established the Mississippi River Corridor Task Force (Executive Order No. MJF 98-01 (1998)). Among other things, this task force was charged with the responsibility of making objective recommendations regarding the most efficient and effective means to best reconcile concerns for the environment and human health with the desire to promote industrial development. During its fact-finding activities, the task force received briefings on TRI from LDEQ. In its final report to the Governor, the task force recommend an expanded use of the Toxics Release Inventory as a tool for greater public understanding of toxic chemicals in the community.

Finally, given the high concentration of communities and industries along the Mississippi River, Environmental Justice remains a priority for the state of Louisiana. Louisiana is confident that resources, such as TRI, will prove to be invaluable in resolving Environmental Justice issues in the State.

For more information, contact:  
DEQ Community Industrial Relations Group  
(225) 765-0735

Chapter 2

# **1998 Releases in Louisiana**

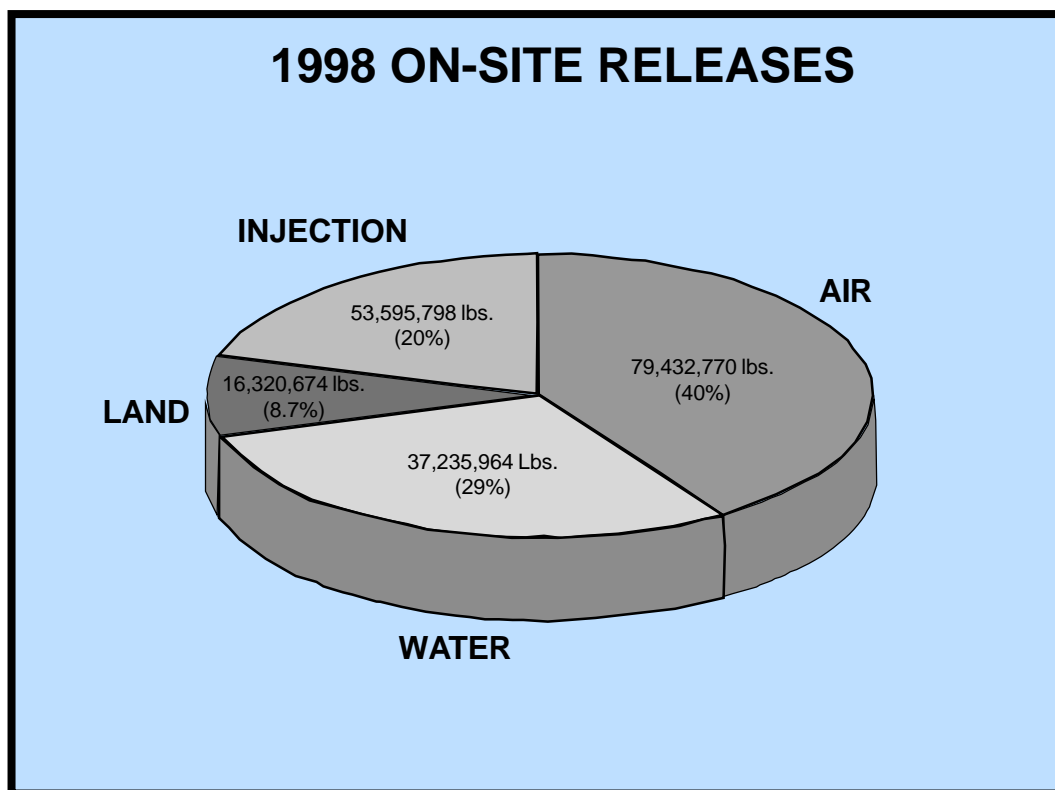
## **2.0 - Introduction**

Reporting under the Toxics Release Inventory Program (TRI) has strengthened environmental awareness in the community. Since the Emergency Planning and Community Right-to-Know Act was enacted in 1986, more citizens are actively involved in environmental-related activities in the community. Citizens have more access to TRI data and other environmental information than ever before. (Please refer to the “Sources of Associated Information” section in this report for more resources.) Annually, TRI data is made available to the public in several formats, including electronic (several searchable websites) and hard copy (state and federal annual reports.) In addition to the hard copy annual report, Louisiana provides an electronic version of the report, as well as other TRI information at our website <http://www.deq.state.la.us/evaluation/TRI/index.htm>. This chapter of the annual report provides release data, as submitted by facilities in Section 5 of the Form R. Subsequent chapters will provide information on transfers (Section 6.2 of the form) and other data subsets, as prepared by Louisiana. While both the state and EPA provide TRI data to the public, be advised that the databases may vary based on revisions received prior to the cutoff date for this publication.

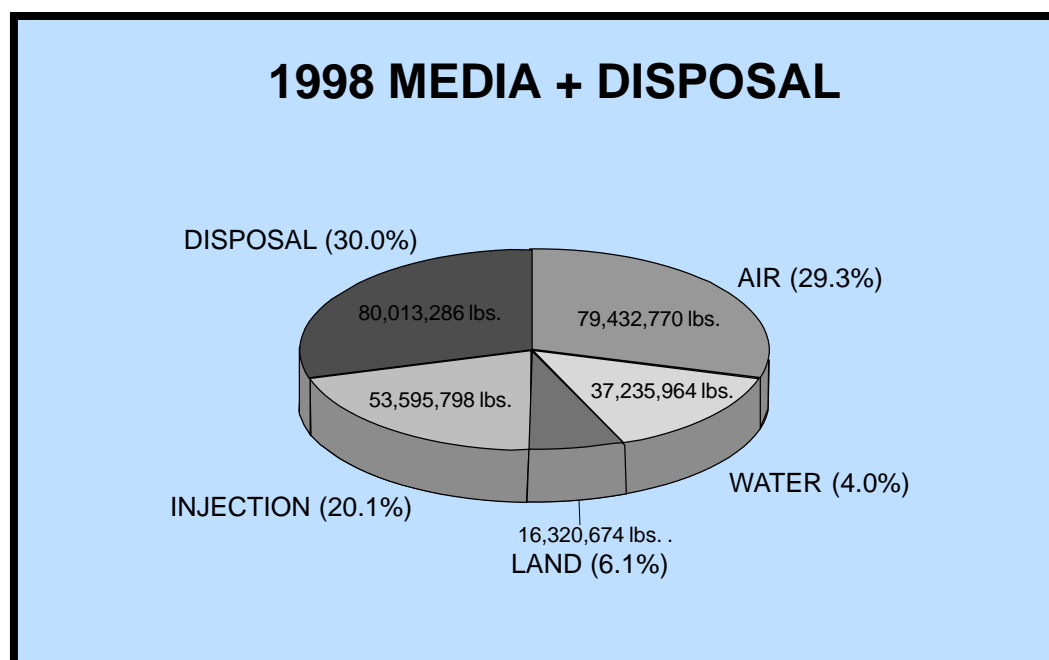
## **2.1 Releases**

In 1998, a total of 327 Louisiana facilities submitted reports under the TRI Program, including 48 new facilities based on SIC codes. TRI reporters submitted a total of 2292 forms, including 107 certification statements (Form A's). The forms represent data for 250 chemicals and chemical categories in the state's database.

For the purpose of this report, “total releases” includes on-site releases to air, water, on-site land, and underground injection. EPA “total releases” includes the off-site releases (the amount transferred off-site for disposal) along with discharges to air, water, land, and underground injection. Based on 1998 submittals by all facilities for all chemicals, total releases for Louisiana were 186,585,206 pounds. Air releases contributed 40% (79,432,770 pounds), water discharges were 20% (37,235,964 pounds), on-site land releases were 8.7% (16,320,674 pounds) and underground injection represented 29% (53,595,798 pounds). In Louisiana, all release data reported in the underground injection category refers to data submitted for Class I Wells. No underground injection data for Class II- Class V Wells was submitted for 1998. The release totals by media are shown in the first pie chart below. The EPA release totals, including transfers for off-site disposal, (80,013,286 pounds), are shown in the second pie chart.



\* All data presented for underground injection refers to Class I wells.



\* All data presented for underground injection refers to Class I wells.

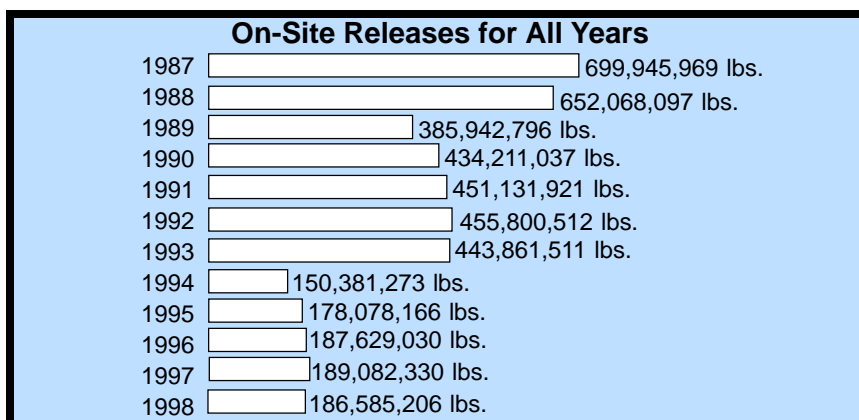
## Louisiana Toxics Release Inventory Report - 1998

Comparing 1998 submittals with all data reported in 1997 by all facilities for all chemicals, total releases dipped slightly by approximately 1%. By media, water and underground injection dropped 20% and 10%, respectively, due to various reduction projects. Air and land releases increased 6% and 107%, respectively, due to increases in production. Excluding new facilities, total releases dropped 11% when comparing 1998 submittals with 1997. By media, air, water, and underground injection dropped 2%, 28% and less than 1% respectively. Land releases increased slightly by 2%. The table below presents the toxic chemical releases for all years.

### ON-SITE RELEASES FOR ALL YEARS

YEAR	AIR	WATER	LAND	INJECTION	TOTAL
1987	143,286,846	168,286,510	1,814,955	386,071,658	699,459,969
1988	139,007,995	153,281,365	2,520,149	357,258,588	652,068,097
1989	133,880,811	40,104,653	2,488,130	209,469,202	385,942,796
1990	111,934,786	97,633,238	1,669,414	222,973,599	434,211,037
1991	99,666,717	157,852,539	2,021,979	191,590,686	451,131,921
1992	88,660,784	182,468,480	2,504,873	182,166,375	455,800,512
1993	76,352,389	208,320,234	4,663,578	154,325,310	443,661,511
1994	85,267,417	21,092,400	3,970,832	40,050,624	150,381,273
1995	85,597,036	29,772,445	4,782,601	57,926,084	178,078,166
1996	84,679,836	38,368,957	5,705,501	58,874,736	187,629,030
1997	74,641,632	46,913,366	7,783,000	59,744,332	189,082,330
1998	79,432,770	37,235,964	16,320,674	53,595,798	186,585,206
a %	↑ 6.42	↓ 20.63	↑ 107.7	↓ 10.29	↓ 1.32
b %	↓ 2.08	↓ 28.24	↑ 2.63	↓ 0.89	↓ 11.25
c %	↓ 44.56	↓ 77.87	↑ 799	↓ 86.12	↓ 73.32
d %	↓ 48.99	↓ 80	↑ 340	↓ 86.26	↓ 76.01
a = Percentage Change from 1997 to 1998 with New SIC b = Percentage Change from 1997 to 1998 without New SIC c = Percentage Change from 1987 to 1998 with New SIC d = Percentage Change from 1987 to 1998 without New SIC					

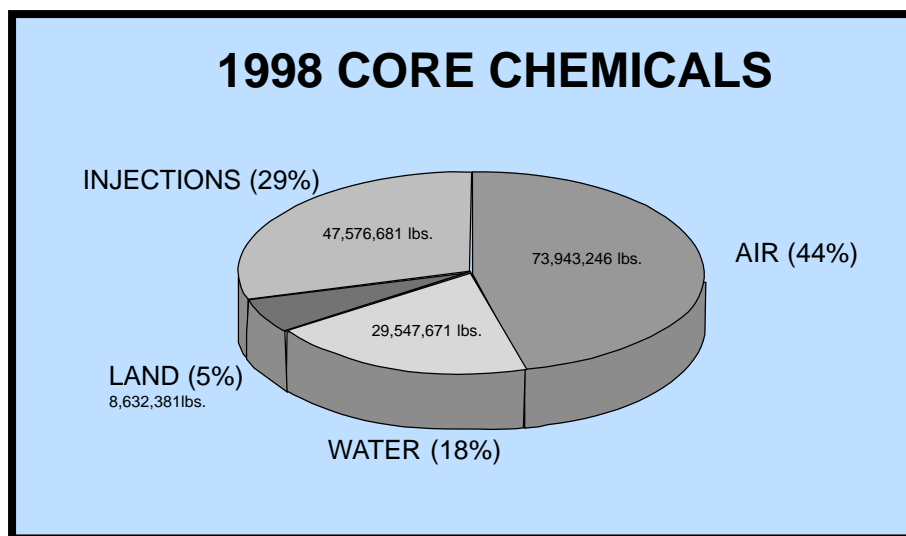
Total Releases  
For All Years



## 2.2 - Core Chemicals

As the TRI program changes, comparing the data from year to year has become increasingly complicated. Moreover, the presentation of data for new chemicals or facilities requires further separation into subsets to accurately perform comparisons. Since the first data year, many chemicals and chemical categories have been added or removed from the TRI list. Examining the data for the subset, *Core Chemicals*, allows the reader to compare those chemicals that have been consistently reported throughout the past eleven years. In 1998, total releases of 166,444,743 pounds, were reported for *Core Chemicals*. The releases broken out by media are as follows: air releases were 44% (73,943,246 pounds), water releases were 18% (29,547,671 pounds), on-site land releases were 5% (8,632,381 pounds) and underground injection were 29% (47,576,681 pounds). Compared to the baseline year 1995, *Core Chemicals* have increased approximately 6%, from 157 million pounds to 166 million pounds. Trend data broken out by media appears in the chart below.

1998  
Core Chemicals



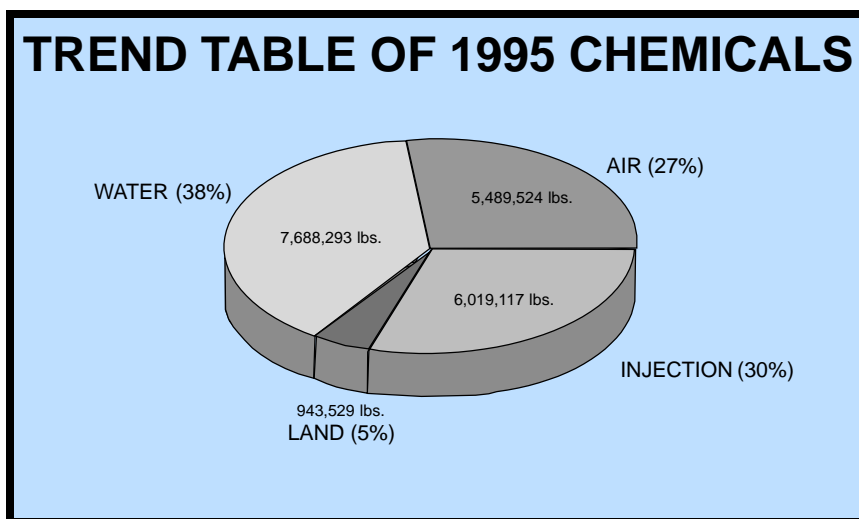
**TREND TABLE OF CORE CHEMICALS (IN POUNDS)**

	1995	1996	1997	1998
<b>TOTAL</b>	157,332,459	137,879,701	169,097,345	166,444,743
<b>AIR</b>	80,428,161	80,223,231	69,984,722	73,943,246
<b>WATER</b>	21,789,411	29,771,822	38,255,574	29,547,671
<b>LAND</b>	4,715,902	5,664,632	7,781,917	8,632,381
<b>INJECTION</b>	50,398,985	51,920,349	53,075,132	47,576,681

## 2.3 - 1995 Chemicals

In 1995, EPA added 313 new chemicals and chemical categories, almost doubling the list of reportable chemicals under the TRI Program. Currently, there are approximately 640 chemicals and chemical categories on the TRI list. In Louisiana, 250 chemicals and chemical categories have been reported, of which 49 are in the new subset, *1995 Chemicals*. As with the *Core Chemicals* subset, year-to-year comparison of *1995 Chemicals* provides the most accurate presentation of the data. For this reporting year, total releases for *1995 Chemicals* were 20,140,463 pounds. By media, air releases were 5,489,524 pounds (27%), water releases were 7,688,293 pounds (38%), on-site land releases were 943,529 pounds (5%), and underground injection releases were 6,019,117 pounds (30%). The trend table for *1995 Chemicals* is shown in the table below.

1998 Chemicals  
Total Releases



**TREND TABLE OF 1995 CHEMICALS  
(IN POUNDS)**

	1995	1996	1997	1998
<b>TOTAL</b>	20,745,707	20,048,996	19,984,985	20,140,463
<b>AIR</b>	5,168,875	4,456,605	4,656,910	5,489,524
<b>WATER</b>	7,983,034	8,597,135	8,656,910	7,688,293
<b>LAND</b>	66,699	40,869	1,083	943,529
<b>INJECTION</b>	7,527,099	6,954,387	6,669,200	6,019,117

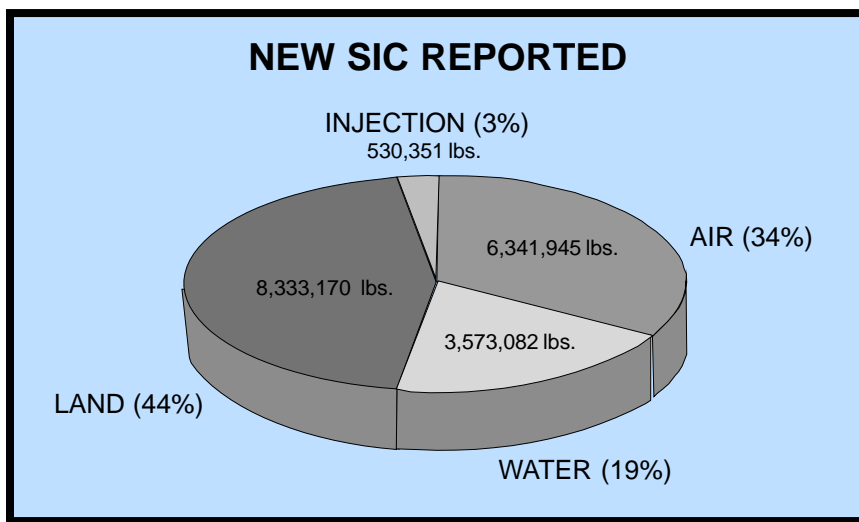


## 2.4 - New SIC

In addition to these data subsets presented above, we add another subset of data. *New SIC*, represents the new facilities that reported for the first time in 1998, based on their Standard Industrial Classification codes. For the first two subsets, multiple years of data are presented. However, only the current year of data is available for the *New SIC*.

*New SIC* reported total releases of 18,778,660 pounds, which includes air releases of 6,341,945 pounds (34%), water releases of 3,573,082 pounds (19%), on-site land releases of 8,333,170 pounds (44%) and injection releases of 530,351 pounds (3%). As previously mentioned, 49 new facilities reported for the first time based on their SIC code. The new SIC codes reported in Louisiana were **4911** (Electric Generators), **4953** (Commercial Disposal Facilities), **5169** (Chemical and Allied Products), **5171** (Petroleum Bulk Stations and Terminals) and **7389** (Solvent Recovery Services). Other SIC codes were preset in New Section 1.2 of Chapter 1.

### New SIC Reported



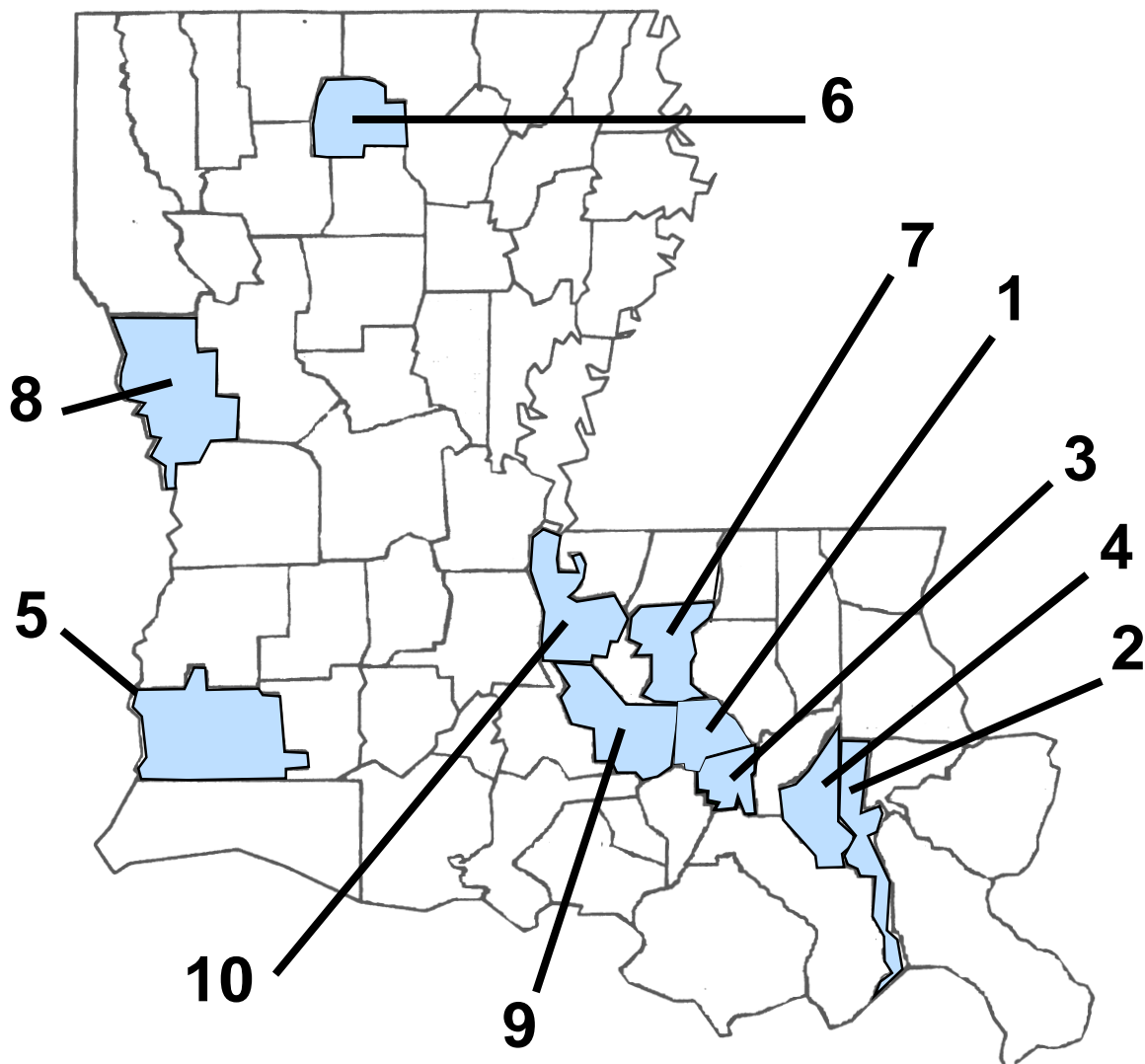
NEW SIC	AIR	WATER	LAND	INJECTION
<b>49</b>	4,199,397	79,233	8,324,308	530,351
<b>51</b>	35,391	3	0	0
<b>73</b>	2	0	0	0
<b>SUBTOTAL</b>	4,234,790	79,236	8,324,308	530,351

## 2.5 - Top 30 Facilities On-Site Releases (in pounds)

RANK	TOTAL LBS.	FACILITY	PARISH
1	22,119,671	PCS NITROGEN FERTILIZER,L.P.	ASCENSION
2	19,905,208	CYTEC - FORTIER PLANT	JEFFERSON
3	12,807,327	IMC-AGRICO CHEMICAL CO.-FAUSTI	ST. JAMES
4	9,712,560	ANGUS CHEM	OUACHITA
5	9,240,489	MONSANTO COMPANY	ST. CHARLES
6	8,924,959	RUBICON, INC.	ASCENSION
7	5,987,795	CF INDUSTRIES, INC.	ASCENSION
8	5,158,974	INTERNATIONAL PAPER, MANSFIELD	DE SOTO
9	5,016,482	BIG CAJUN 2	POINTE COUPEE
10	4,488,867	EXXON BATON ROUGE REFINERY	EAST BATON ROUGE
11	3,803,805	CHEMICAL WASTE MANAGEMENT	CALCASIEU
12	3,762,540	BOISE CASCADE CORPORATION	BEAUREGARD
13	3,486,931	TRIAD NITROGEN, INC.	ASCENSION
14	3,446,819	CLECO CORPORATION - DOLET HILL	DE SOTO
15	3,351,153	IMC-AGRICO CHEMICAL CO.	ST. JAMES
16	3,225,675	LOUISIANA PIGMENT COMPANY L.P.	CALCASIEU
17	3,179,863	BORDEN CHEMICAL AND PLASTICS	ASCENSION
18	2,850,406	UNIROYAL CHEMICAL CO., INC.	ASCENSION
19	2,602,015	RIVERWOOD INT. - PLANT #31	OUACHITA
20	2,434,588	WITCO CORP. - HARVEY/GRETNA	JEFFERSON
21	2,263,960	THE DOW CHEMICAL COMPANY,	IBERVILLE
22	2,212,571	CITGO PETROLEUM CORPORATION	CALCASIEU
23	2,073,907	GEORGIA PACIFIC CORP.-PORT HUD	EAST BATON ROUGE
24	1,896,263	EXXON CHEMICAL, BATON ROUGE CH	EAST BATON ROUGE
25	1,843,810	STONE - HODGE, INC.	JACKSON
26	1,793,352	FIRESTONE SYNTHETIC RUBBER	CALCASIEU
27	1,772,417	ALLIED SIGNAL	EAST BATON ROUGE
28	1,729,550	GAYLORD CONTAINER CORPORATION	WASHINGTON
29	1,690,324	BASF CORPORATION	ASCENSION
30	1,566,471	INTERNATIONAL PAPER - LA MILL	MOREHOUSE

## 2.6 - 1998 Total Releases Top Ten Parishes

RANK	PARISH	NO. OF FACILITIES	TOTAL RELEASES
1	Ascension	18	50,843,254
2	Jefferson	25	22,794,000
3	St. James	9	17,200,995
4	St. Charles	21	14,962,893
5	Calcasieu	29	13,472,000
6	Ouachita	9	12,596,872
7	East Baton Rouge	24	12,380,250
8	De Soto	5	8,613,948
9	Iberville	18	5,228,700
10	Poine Coupee	2	5,016,482

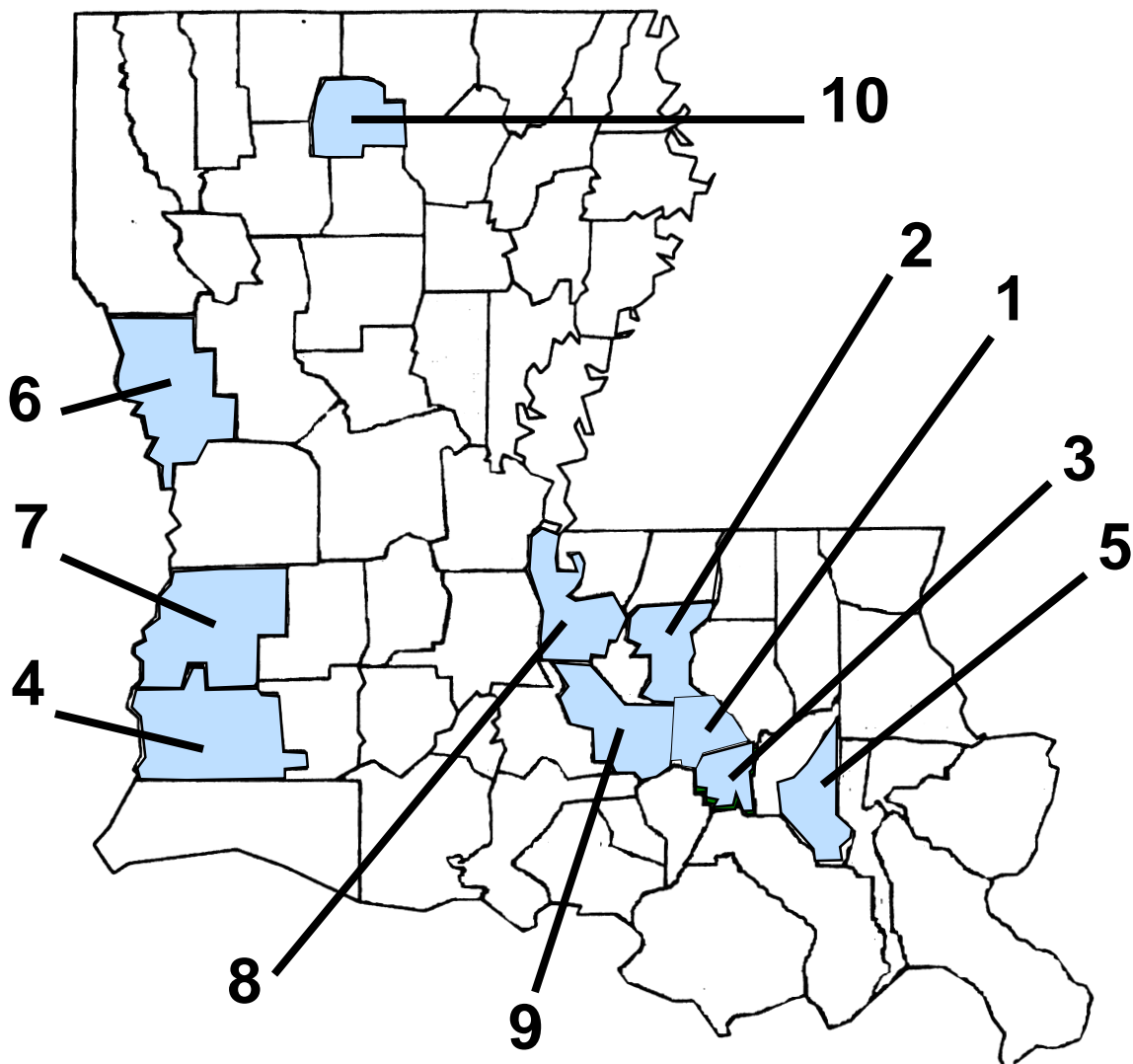


## 2.7 - Top 30 Facilities Releases to Air

RANK	AIR	FACILITY	PARISH
1	6,554,242	IMC-AGRICO CHEMICAL CO.-FAUSTI	ST. JAMES
2	5,426,870	CF INDUSTRIES, INC.	ASCENSION
3	4,126,915	INTERNATIONAL PAPER, MANSFIELD	DE SOTO
4	3,663,400	BOISE CASCADE CORPORATION	BEAUREGARD
5	3,438,578	TRIAD NITROGEN, INC.	ASCENSION
6	3,336,934	BIG CAJUN 2	POINTE COUPEE
7	2,651,443	BORDEN CHEMICAL AND PLASTICS	ASCENSION
8	2,224,761	RIVERWOOD INT. - PLANT #31	OUACHITA
9	2,113,195	CITGO PETROLEUM CORPORATION	CALCASIEU
10	1,839,070	EXXON CHEMICAL,BATON ROUGE CH	EAST BATON ROUGE
11	1,832,500	STONE - HODGE, INC.	JACKSON
12	1,823,800	PCS NITROGEN FERTILIZER,L.P.	ASCENSION
13	1,793,352	FIRESTONE SYNTHETIC RUBBER	CALCASIEU
14	1,751,487	ALLIEDSIGNAL	EAST BATON ROUGE
15	1,721,350	GAYLORD CONTAINER CORPORATION	WASHINGTON
16	1,538,332	GEORGIA PACIFIC CORP.	EAST BATON ROUGE
17	1,511,100	THE DOW CHEMICAL COMPANY	IBERVILLE
18	1,379,223	EXXON CHEMICAL COMPANY	EAST BATON ROUGE
19	1,285,449	FARMLAND INDUSTRIES INC.	GRANT
20	1,171,286	UNIROYAL CHEMICAL CO., INC.	ASCENSION
21	1,146,790	INTERNATIONAL PAPER -PINEVILLE	RAPIDES
22	1,135,526	INTERNATIONAL PAPER - LA MILL	MOREHOUSE
23	1,133,695	SHELL OIL COMPANY - EAST -	ST. CHARLES
24	1,129,016	WILLAMETTE INDUSTRIES INC.	NATCHITOCHES
25	1,095,140	EXXON BATON ROUGE REFINERY	EAST BATON ROUGE
26	971,458	SHELL CHEMICAL COMPANY	ASCENSION
27	924,028	MOTIVA ENTERPRISES LLC	ST. CHARLES
28	887,949	RUBICON, INC.	ASCENSION
29	869,816	PENNZOIL PRODUCTS COMPANY	CADDO
30	828,812	UNION CARBIDE CORPORATION	ST. CHARLES

## 2.8 - 1998 Total Releases to Air Top Ten Parishes

RANK	PARISH	NO.OF FACILITIES	AIR
1	Ascension	18	18,539,138
2	East Baton Rouge	24	8,260,737
3	St. James	9	7,767,246
4	Calcasieu	29	6,037,073
5	St. Charles	21	4,877,430
6	De Soto	5	4,704,984
7	Beauregard	4	3,722,698
8	Pointe Coupee	2	3,336,934
9	Iberville	18	3,007,768
10	Quachita	9	2,641,897

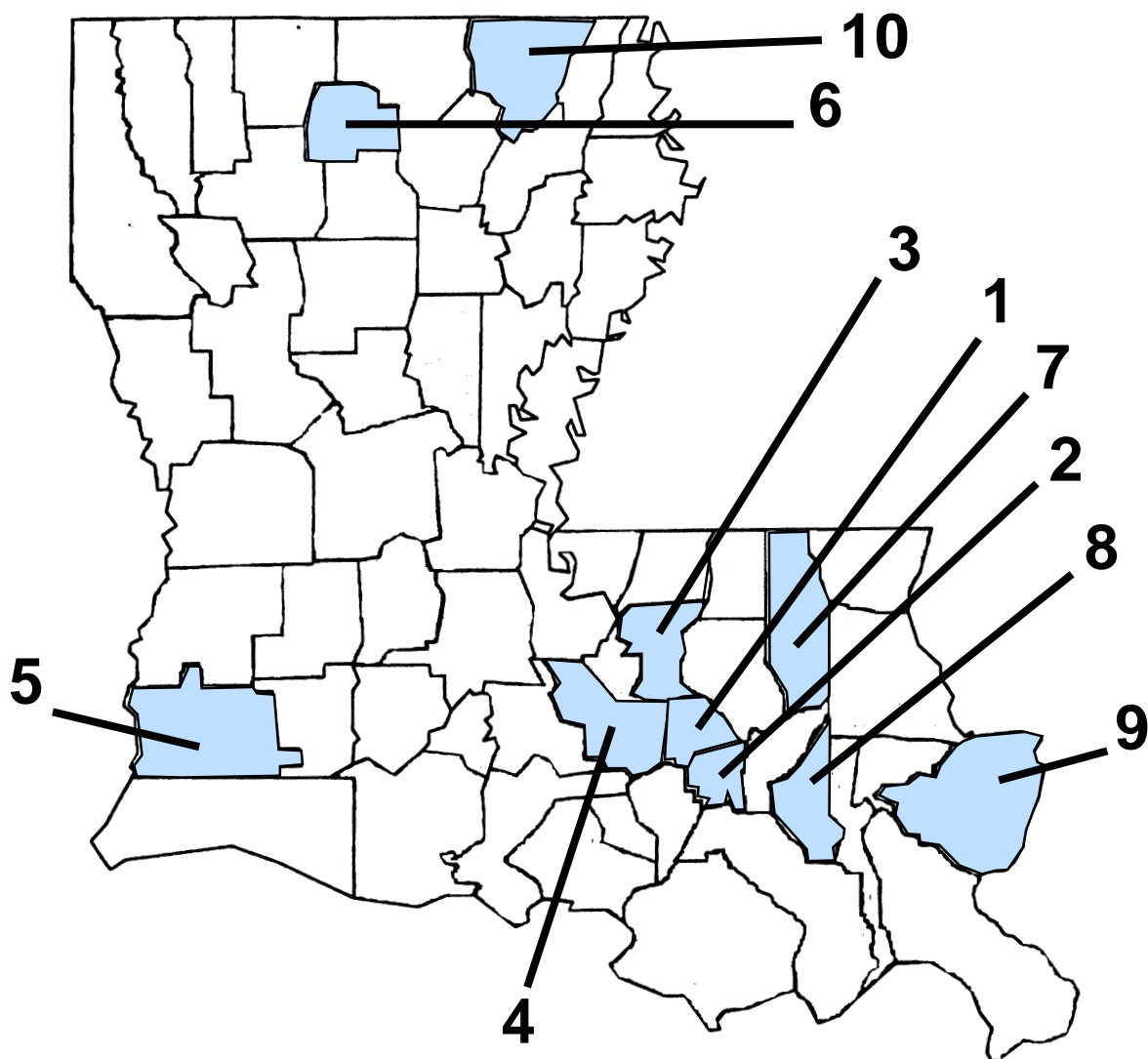


## 2.9 - Top 30 Facilities Releases to Surface Water (in pounds)

RANK	WATER	FACILITY	PARISH
1	19,702,087	PCS NITROGEN FERTILIZER,L.P.	ASCENSION
2	5,805,841	IMC-AGRICOLA CHEMICAL CO.-FAUSTI	ST. JAMES
3	3,393,550	EXXON BATON ROUGE REFINERY	EAST BATON ROUGE
4	2,736,301	IMC-AGRICOLA CHEMICAL CO.	ST. JAMES
5	1,084,265	BASF CORPORATION	ASCENSION
6	871,455	NOVARTIS CROP PROTECTION, INC.	IBERVILLE
7	560,925	CF INDUSTRIES, INC.	ASCENSION
8	368,896	ANGUS CHEM	OUACHITA
9	290,940	GEORGIA PACIFIC CORP.-PORT HUD	EAST BATON ROUGE
10	255,500	SANDERSON FARMS, INC.	TANGIPAHOA
11	189,945	INTERNATIONAL PAPER - LA MILL	MOREHOUSE
12	176,560	MONSANTO COMPANY	ST. CHARLES
13	144,844	CHALMETTE REFINING L.L.C.	ST. BERNARD
14	133,107	PPG INDUSTRIES, INC.	CALCASIEU
15	126,567	THE DOW CHEMICAL COMPANY	IBERVILLE
16	102,220	CROWN PAPER COMPANY	WEST FELICIANA
17	99,376	CITGO PETROLEUM CORPORATION	CALCASIEU
18	99,140	BOISE CASCADE CORPORATION	BEAUREGARD
19	93,811	ARCO CHEM	CALCASIEU
20	84,067	MURPHY OIL USA, INC.	ST. BERNARD
21	57,905	AIR PRODUCTS CHEM	IBERVILLE
22	57,193	EXXON CHEMICAL, BATON ROUGE CH	EAST BATON ROUGE
23	48,583	CYTEC - FORTIER PLANT	JEFFERSON
24	48,353	TRIAD NITROGEN, INC.	ASCENSION
25	48,054	UNION CARBIDE CORPORATION	ST. CHARLES
26	43,050	CONOCO LAKE CHARLES REFINERY	CALCASIEU
27	41,829	VALERO REFINING	ST. LANDRY
28	41,441	VULCAN MATERIALS COMPANY,	ASCENSION
29	40,576	PENNZOIL PRODUCTS COMPANY	CADDO
30	38,910	CLECO CORPORATION - DOLET HILL	DE SOTO

## 2.10 - 1998 Total Releases to Surface Water Top Ten Parishes

RANK	PARISH	NO. OF FACILITIES	WATER
1	Ascension	18	21,498,277
2	St. James	9	8,556,490
3	East Baton Rouge	24	3,786,348
4	Iberville	18	1,061,784
5	Calcasieu	29	431,311
6	Ouachita	9	417,212
7	Tangipahoa	6	255,500
8	St. Charles	21	253,843
9	St. Bernard	3	228,911
10	Morehouse	1	189,945



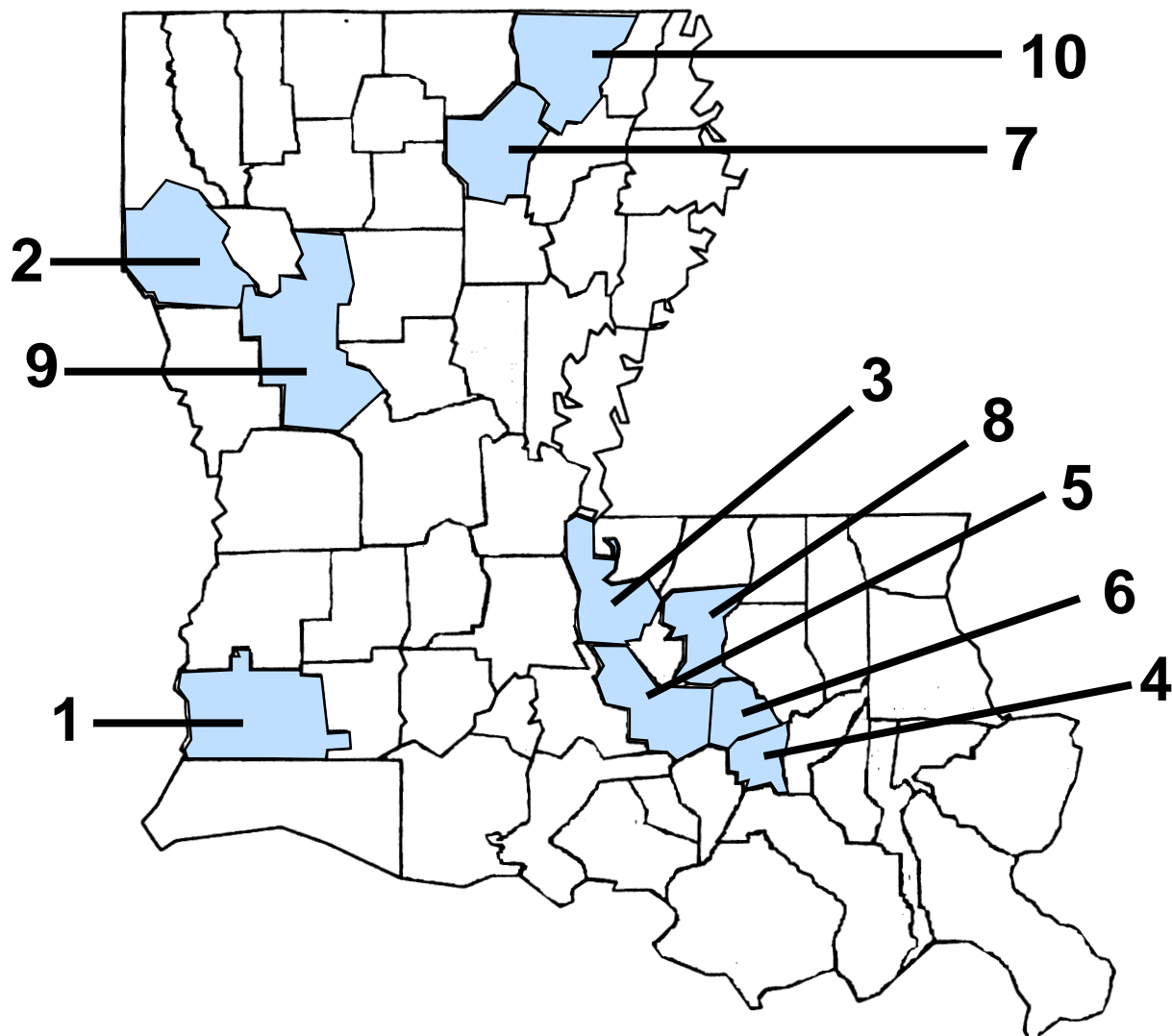
## **2.11 - Top 30 Facilities Releases to On-Site Land (in pounds)**

<b>RANK</b>	<b>LAND</b>	<b>FACILITY</b>	<b>PARISH</b>
1	3,803,510	CHEMICAL WASTE MANAGEMENT	CALCASIEU
2	3,200,000	LOUISIANA PIGMENT COMPANY L.P.	CALCASIEU
3	2,837,950	CLECO CORPORATION - DOLET HILL	DE SOTO
4	1,677,048	BIG CAJUN 2	POINTE COUPEE
5	1,023,297	INTERNATIONAL PAPER, MANSFIELD	DE SOTO
6	626,293	THE DOW CHEMICAL COMPANY	IBERVILLE
7	593,784	PCS NITROGEN FERTILIZER, L.P.	ASCENSION
8	447,244	IMC-AGRICOLA CHEMICAL CO.-FAUSTI	ST. JAMES
9	373,630	IMC-AGRICOLA CHEMICAL CO.-	ST. JAMES
10	364,564	RIVERWOOD INT. - PLANT #31	QUACHITA
11	320,000	WILLAMETTE INDUSTRIES INC.	NATCHITOCHES
12	244,635	GEORGIA PACIFIC CORP. - PORT HUD	EAST BATON ROUGE
13	241,000	INTERNATIONAL PAPER - LA MILL	MOREHOUSE
14	133,810	INTERNATIONAL PAPER (PINEVILLE)	RAPIDES
15	119,115	CHEVRON CHEMICAL COMPANY, OAK	PLAQUEMINES
16	98,346	CROWN PAPER COMPANY	WEST FELICIANA
17	87,853	EXIDE CORPORATION - BR SMELTER	EAST BATON ROUGE
18	47,700	KAISER ALUMINUM AND CHEMICAL	ST. JAMES
19	18,829	AMITE FOUNDRY & MACHINE, INC.	TANGIPAHOA
20	18,511	IMC AGRICOLA CHEMICAL COMPANY	ST. CHARLES
21	13,207	MARATHON OIL COMPANY	ST. JOHN
22	8,685	STAR ENTERPRISE	ST. JAMES
23	7,116	WESTVACO CORPORATION	BEAUREGARD
24	5,800	CLECO CORPORATION - WEST	RAPIDES
25	2,591	AMAX METALS RECOVERY, INC.	PLAQUEMINES
26	2,261	SHELL OIL COMPANY - WEST	ST. CHARLES
27	780	MICRO CHEMICAL COMPANY	FRANKLIN
28	720	ANGUS CHEM	QUACHITA
29	585	MOTIVA ENTERPRISES LLC	ST. CHARLES
30	500	ALLIED SIGNAL	EAST BATON ROUGE



## 2.12 -1998 Total Releases to On-Site Land Top Ten Parishes

RANK	PARISH	NO. OF FACILITIES	LAND
1	Calcasieu	29	7,003,616
2	De Soto	5	3,861,247
3	Pointe Coupee	2	1,677,048
4	St. James	9	877,259
5	Iberville	18	626,293
6	Ascension	18	593,784
7	Ouachita	9	365,284
8	East Baton Rouge	24	333,165
9	Natchitoches	4	320,000
10	Morehouse	1	241,000

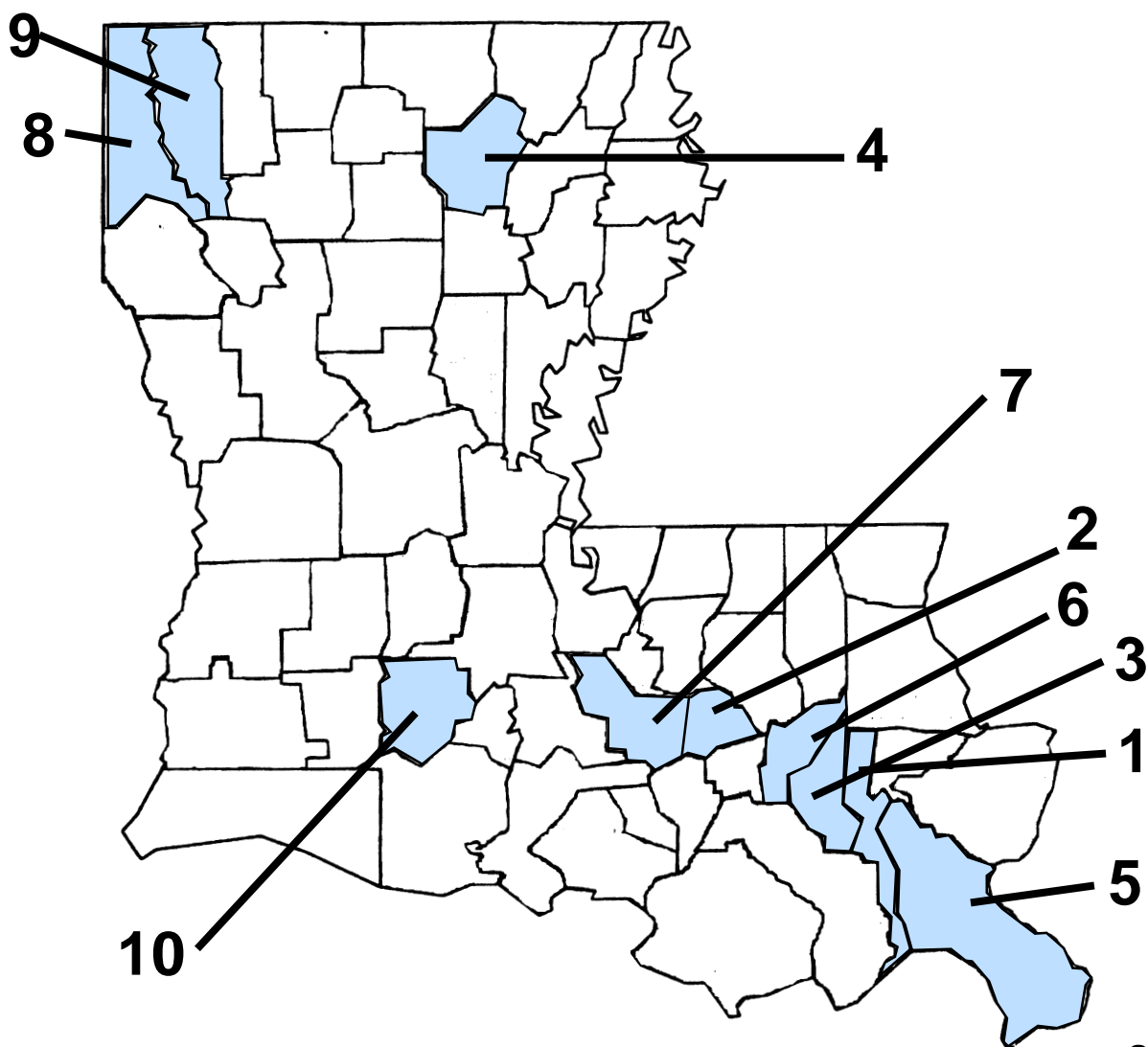


## **2.13 - Top 30 Facilities Releases to Underground Injection (in pounds)**

<b>RANK</b>	<b>INJECTION</b>	<b>FACILITY</b>	<b>PARISH</b>
1	19,605,900	CYTEC - FORTIER PLANT	JEFFERSON
2	9,172,479	ANGUS CHEM	OUACHITA
3	8,951,300	MONSANTO COMPANY	ST. CHARLES
4	8,036,800	RUBICON, INC.	ASCENSION
5	2,377,190	WITCO CORP. - HARVEY/GRETNA	JEFFERSON
6	1,655,320	UNIROYAL CHEMICAL CO., INC.	ASCENSION
7	761,712	WITCO CORPORATION - POYLMER	ST. CHARLES
8	714,153	CHEVRON CHEMICAL COMPANY	PLAQUEMINES
9	535,024	DU PONT PONTCHARTRAIN WORKS	ST. JOHN
10	530,351	SAFETY KLEEN, INC.	IBERVILLE
11	519,935	BORDEN CHEMICAL AND PLASTICS	ASCENSION
12	504,610	UOP-SHREVEPORT PLANT	CADDO
13	107,520	DUPONT DOW ELASTOMERS LLC	ST. JOHN
14	97,000	OCCIDENTAL CHEMICAL CORP.	ST. CHARLES
15	24,000	CALUMET LUBRICANTS CO.	BOSSIER
16	2,504	ZENECA INC. (FORMERLY ICI AM-)	IBERVILLE
17	0	BORDEN CHEM & PLASTICS OPER.	WEST BATON ROUGE
18	0	ACME TUBE	DE SOTO
19	0	SHERING - PLOUGH VETERINARY OP	EAST BATON ROUGE
20	0	IMC-AGRICOLA CHEMICAL CO.	ST. JAMES
21	0	IMC-AGRICOLA CHEMICAL CO.-FAUST	ST. JAMES
22	0	IMC-AGRICOLA CHEMICAL COMPANY	ST. CHARLES
23	0	AIR PRODUCTS CHEM	IBERVILLE
24	0	AIR PRODUCTS	ORLEANS
25	0	BOC GASES (FORM. AIRCO IND GASE)	ORLEANS
26	0	ALAC NORCO ASU	ST. CHARLES
27	0	ALAC PLAUEMINE ASU	IBERVILLE
28	0	ALLIED SIGNAL	EAST BATON ROUGE
29	0	ALLIED SIGNAL INC	ASCENSION
30	0	ALLOY PIPING PROD	CADDO

## 2.14 - 1998 Total Releases to Underground Injection Top Ten Parishes

RANK	PARISH	NO. OF FACILITIES	LAND
1	Jefferson	25	21,983,090
2	Ascension	18	10,212,055
3	St. Charles	21	9,810,012
4	Ouachita	9	9,172,479
5	Plaquemines	6	714,153
6	St. John	12	642,544
7	Iberville	18	532,855
8	Caddo	19	504,610
9	Bossier	4	24,000
10	Acadia	2	0



## 2.15 - Top Ten Chemicals

The top three chemicals reported in Louisiana are **phosphoric acid, ammonia, and methanol**. These three chemicals accounted for approximately 43% of all chemicals. Phosphoric acid, accounted for approximately 29 million pounds or 16% of all chemicals and was reported by 58 facilities. (In December 1999, EPA proposed a rule to delist phosphoric acid from the list of TRI reportable chemicals. At the time of this writing, the rule has not been finalized.) Louisiana reporters of phosphoric acid are primarily in the fertilizer industry. These facilities account for 99.8% of all phosphoric acid reported. Ammonia accounted for approximately 28 million pounds or 15% of all chemicals. There were 82 facilities that reported ammonia, with the fertilizer industry accounting for approximately 80% of all ammonia reported. Methanol accounted for approximately 23 million pounds or 12% of all chemicals reported. Methanol was reported by 89 facilities. The primary facilities, pulp and paper mills, contribute approximately 71% of all methanol reported. In the chart below, the top ten chemicals accounted for 70% of the total chemicals reported.

RANK	CHEMICAL	AIR	WATER	LAND	INJECTION	TOTAL	# FACS
1	Phosphoric Acid	20,950	27,502,098	1,437,669	13,476	<b>28,974,193</b>	<b>58</b>
2	Ammonia	21,873,806	669,803	10,267	5,303,871	<b>27,857,747</b>	<b>82</b>
3	Methanol	17,378,918	336,037	297,023	4,699,095	<b>22,711,073</b>	<b>89</b>
4	Nitrate Compounds	0	7,627,993	42,750	5,119,236	<b>12,789,979</b>	<b>37</b>
5	Formaldehyde	457,842	14,763	431	9,310,353	<b>9,783,389</b>	<b>38</b>
6	Acetonitrile	42,412	596	0	7,811,000	<b>7,854,008</b>	<b>7</b>
7	Nitric Acid	31,872	5	3,200	6,587,105	<b>6,622,182</b>	<b>17</b>
8	N-Hexane	5,060,327	4,010	758	23,227	<b>5,088,322</b>	<b>40</b>
9	Ethylene	4,318,452	0	0	0	<b>4,318,452</b>	<b>51</b>
10	Barium Compounds	123,175	99,986	3,766,143	0	<b>3,989,304</b>	<b>18</b>

## 2.16 - Special Interest Chemicals

Louisiana's TRI report has previously highlighted chemicals of special interest by providing general health information. The highlighted chemicals are listed in the table below:

1988	Ammonia	Benzene	Chloroform	1,2-diichloroethane
1989	Toluene	Vinyl Chloride	Ethylene oxide	
1990	Acrylonitrile	Carbon tetrachloride	Lead/lead compounds	
1991	Hexachlorobenzene	Hexachloro-butadiene	Mercury/mercury compounds	
1992	Acetonitrile	Acrylamide	Arsenic	Formaldehyde
1993	Chlorine	Hydrogen sulfide	1,2-dichloroethane	Xylenes (mixed isomers)
1994	Tetrachloroethylene	1,3-butadiene	Acetaldehyde	1,1,2,2-tetrachloroethane
1995	Carbon disulfide	Acrylic acid	Ethylene	
1996	No chemicals were highlighted			
1997	Acrylonitrile	Hexachlorobenzene	1,2-dichloroethane	Mercury/mercury compounds

The information on the following pages is a summary of health hazards and effects that may result from exposure to these toxic chemicals. If you are exposed to a toxic substance, several factors will determine whether harmful health effects may occur and what the type and severity of those health effects may be. The effects of exposure to any hazardous substance depend on the dose (how much), the duration (how long), how you are exposed, the route or pathway by which you are exposed (breathing, eating, drinking, or skin contact), personal traits and habits, and whether other chemicals are present. Additional information is available from the **Agency for Toxic Substance Disease Registry (ATSDR) Information Center at 1-800-447-1544**. Please refer to the "Source of Associated information" section in this report for additional references.

For the 1998 edition of the report, the following chemicals will be featured:

- **Lead and Lead Compounds**
- **PCB's**

The chemicals selected for this year's report have been highlighted in the new rules recently finalized by EPA in which the threshold for persistent, bioaccumulative toxic chemicals was lowered. (Please refer to the article on PBT's in Chapter 1.)

### **Lead**

Lead is naturally occurring bluish-gray metal found in small amounts in the earth's crust. It has no special taste or smell. Lead can be found in all parts of our environment. Most of it came from human activities like mining, manufacturing, and the burning of fossil fuels.

#### Uses

Lead has many different uses, most importantly in the production of batteries. Lead is also in ammunition, metal products (solder and pipes), roofing, and devices to shield x-rays.

Because of all health concerns, lead from gasoline, paints and ceramic products, caulking, and pipe solder has been dramatically reduced in recent years.

#### Environmental Fate

- ◆ Lead itself does not break down, but sunlight, air, and water change lead compounds.
- ◆ When released to the air from industry or burning of fossil fuels or waste, it stays in air about 10 days.
- ◆ Most of the lead in soil comes from particles falling out of the air.
- ◆ City soils also contain lead from landfills and leaded paint.
- ◆ Lead sticks to soil particles.
- ◆ It does not move from soil to underground water or drinking water unless the water is acidic or "soft".
- ◆ It stays a long time in both soil and water.

#### Exposure

- ◆ Breathing workplace air (lead smelting, refining, and manufacturing industries).
- ◆ Eating lead-based paint chips.
- ◆ Drinking water that comes from lead pipes or lead soldered fittings.
- ◆ Breathing or ingesting contaminated soil, dust, air, or water near waste sites.
- ◆ Breathing tobacco smoke.
- ◆ Eating contaminated food grown on soil containing lead or food covered with lead-containing dust.
- ◆ Breathing fumes or ingesting lead from hobbies that use lead (leaded-glass, ceramics).

#### Health Effects

Lead can affect almost every organ and system in your body. The most sensitive is the central nervous system, particularly in children. Lead also damages kidneys and the immune system. The effects are the same whether it is breathed or swallowed.

Exposure to lead is more dangerous for young and unborn children. Unborn children can be exposed to lead through their mothers. Harmful effects include premature births, smaller babies, decreased mental ability to the infant, learning difficulties, and reduced growth in young children. These effects are more common after exposure to high levels of lead.

In adults, lead may decrease reaction time, cause weakness in fingers, wrists, or ankles, and possibly affect the memory. Lead may cause anemia, a disorder of the blood. It can cause abortion and danger the male reproductive system. The connection between these effects and exposure to low levels of lead is uncertain.

#### Carcinogenicity

The Department of Health and Human Services (DHHS) has determined that lead acetate and lead phosphate may reasonably be anticipated to be carcinogens based on studies in animals. There is inadequate evidence to clearly determine lead's carcinogenicity in humans.

#### Testing

A blood test is available to measure the amount of lead in your blood and to estimate the amount of your exposure to lead. Blood tests are commonly used to screen children for potential chronic lead poisoning. The Centers for Disease Control and Prevention (CDC) considers children to have an elevated level of lead if the amount in the blood is at least 10 micrograms per deciliter (10 µg/dL). Lead in teeth and bones can be measured with x-rays, but this is not readily available.

#### Limits

The Centers for Disease Control and Prevention (CDC) recommends all children be screened for lead poisoning at least once a year. This is especially important for children between 6 months and 6 six years old.

The Environmental Protection Agency (EPA) requires lead in air not to exceed 1.5 micrograms per cubic meter (1.5 µg/m<sup>3</sup>) averaged over three months. The sale of leaded gasoline is illegal as of December 31, 1995. EPA limits lead in drinking water to 15 micrograms per liter (15 µg/L).

The consumer Product Safety Commission (CPSC), EPA, and the states control the levels of lead in drinking water coolers. Water coolers that release lead must be recalled or repaired. New coolers must be lead-free. Drinking water in schools must be tested for lead.

The Department of Housing and Urban Development (HUD) requires that federally funded housing renovations, public housing, and Indian housing be tested for lead-based paint hazards. Hazards must be fixed covering the paint or removing it.

The Occupational Safety and Health Administration (OSHA) limits the concentration of lead in workroom air to 50 µg/cubic meter for an 8-hour workday. If a worker blood lead level of 40 µg/dL, OSHA requires that worker to be removed from the workroom.

## ***Polychlorinated Biphenyls (PCBs)***

Polychlorinated Biphenyls (PCBs) are a group of manufactured organic chemicals that contain 209 individual chlorinated chemicals (known as congeners). PCBs are either oily liquids or solids and are colorless to light yellow in color. They have no known smell or taste. There are no known natural sources of PCBs. Some commercial PCB mixtures are known in the United States by their industrial trade name, Aroclor.

### *Uses*

PCBs don't burn easily and are good insulating material. They have been used widely as coolants and lubricants in transformers, capacitors, and other electrical equipment. The manufacture of PCBs stopped in the United States in 1977 because of evidence that they build up in the environment and cause harmful effects. Products containing PCBs are old fluorescent lighting fixtures, electrical appliances containing PCB capacitors, old microscope oil, and hydraulic fluids.

### *Environmental Fate*

- ◆ Before 1977, PCBs entered the air, water, and soil during their manufacture and use.
- ◆ Today, PCBs can be released into the environment from hazardous waste sites that contain PCBs, illegal or improper dumping of PCB wastes, and leaks from electrical transformers containing PCBs.
- ◆ PCBs may be carried long distances in the air; they remain in the air for approximately 10 days.
- ◆ In water, a small amount of the PCBs may remain dissolved, but most sticks to organic particles and sediments.
- ◆ PCBs in water build up in fish and marine mammals and can reach levels thousands of times higher than the levels in water.



Exposure

- ◆ Using old fluorescent lighting fixtures and old appliances such as television sets and refrigerators; these may leak small amounts of PCBs into the when they get hot during operation
- ◆ Eating food, including fish, meat and dairy products containing PCBs
- ◆ Breathing air near hazardous sites that contain PCBs
- ◆ Drinking PCB-contaminated well water
- ◆ Repairing or maintaining PCB transformers

Health Effects

Animal testing is sometimes necessary to find out how toxic substances might harm people or to treat those who have been exposed. Laws today protect the welfare or research animals and scientists must follow strict guidelines.

People exposed to PCBs in the air for a long time have experienced irritation of the nose and lungs, and skin irritations, such as acne and rashes.

It is not known whether PCBs may cause birth defects or reproductive problems in people. Some studies have shown that babies born to women who consumed PCB-contaminated fish had problems with their nervous systems at birth. However, it is not known whether these problems were definitely due to PCBs or other chemicals.

Animals that breathed very high levels of PCBs had kidney and liver damage, while animals that ate food with large amounts of PCBs had mild liver damage. Animals that ate food with smaller amounts of PCBs had liver, stomach, and thyroid gland injuries, and anemia, acne, and problems with their reproductive systems. Skin exposure to PCBs in animals resulted in liver, kidney, and skin damage.

Carcinogenicity

It is not known whether PCBs causes cancer in people. In a long term (365 days or longer) study, PCBs caused cancer of the liver in rats that ate certain PCB mixtures.

The Department of Health and Human Services (DHHS) has determined that PCBs may reasonably be anticipated to be carcinogens.

### Testing

There are tests to find out if PCBs are in your blood, body fat, and breast milk. Blood tests are probably the easiest, safest, and best method for detecting recent exposures to large amounts of PCBs.

However, since all people in the industrial countries have some PCBs in their bodies, these tests can only show if you have been exposed to higher-than-normal levels of PCBs. However, these measurements cannot determine the exact amount or type of PCBs you have been exposed to or how long you have been exposed. In addition, they cannot predict whether you will experience any harmful health effects.

### Limits

The EPA has set a maximum contaminant level of 0.0005 milligrams PCBs per liter of drinking water (0.0005 mg/L). The EPA requires that spills or accidental releases into the environment of 1 pound or more of PCBs be reported to the EPA.

The Food and Drug Administration (FDA) requires that milk, eggs, other dairy products, poultry fat, fish, shellfish, and infant foods contain not more than 0.2-3 parts of PCBs per million parts (0.2-3 ppm) of food.

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## Chapter 3

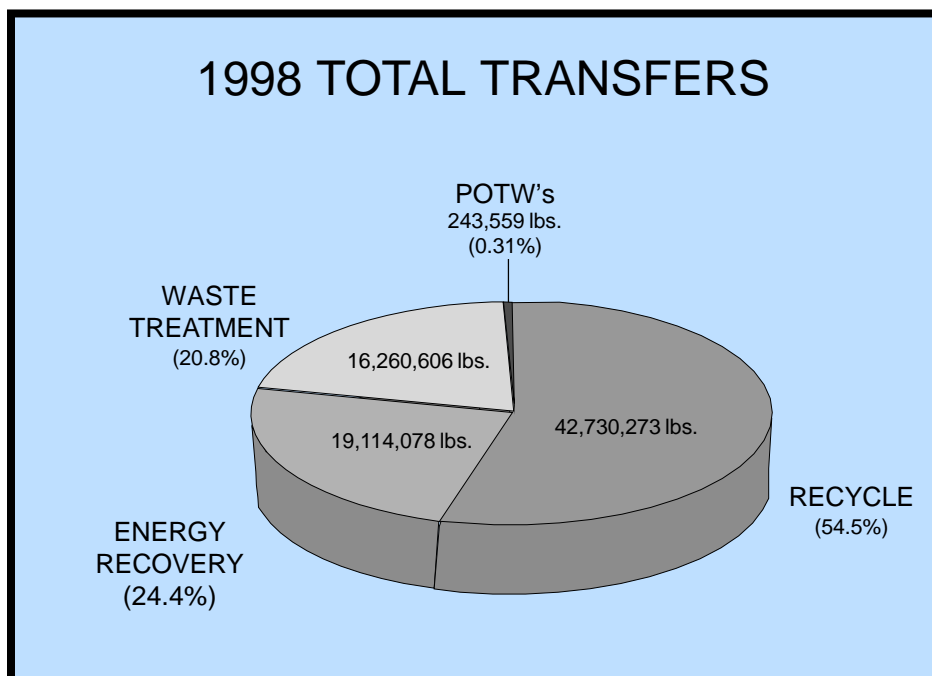
# Transfers

### 3.1 - Introduction

Off-site transfers are reported in Section 6 of the Form R and are characterized as the amount of TRI chemicals in waste transferred off-site for further management. An off-site facility is physically or geographically separate from the reporting facility. Off-site transfers include recycling, energy recovery and waste treatment. Off-site transfers for disposal are characterized as off-site releases. The 1998 data for off-site releases are presented in Chapter 2.

### 3.2 - Transfers

For 1998, total off-site transfers reported were 78,444,516 pounds. These off-site transfers include 42,730,273 pounds (54.5%) sent for recycling, 19,114,078 pounds (24.4%) sent for energy recovery, 16,360,606 pounds (20.8%) sent for waste treatment, and 243,559 pounds sent to Publicly Owned Treatment Works (POTWs) (0.31%).



## Transfers for All Years

YEAR	RECYCLE	ENERGY	WASTE	TOTAL
1987	*	*	257,905	<b>257,905</b>
1988	*	*	156,100	<b>156,100</b>
1989	*	*	179,374	<b>179,374</b>
1990	*	*	280,174	<b>280,174</b>
1991	832,623	194,119	143,068	<b>1,169,810</b>
1992	2,559,655	556,142	192,667	<b>3,308,464</b>
1993	1,439,557	418,025	189,930	<b>2,047,512</b>
1994	61,116,544	9,840,810	6,198,079	<b>77,155,433</b>
1995	52,717,491	15,557,898	8,451,463	<b>76,726,852</b>
1996	52,368,016	15,977,361	9,413,198	<b>77,758,575</b>
1997	55,182,779	14,342,595	10,552,100	<b>80,077,474</b>
1998	42,730,273	19,114,078	16,360,606	<b>78,204,957</b>

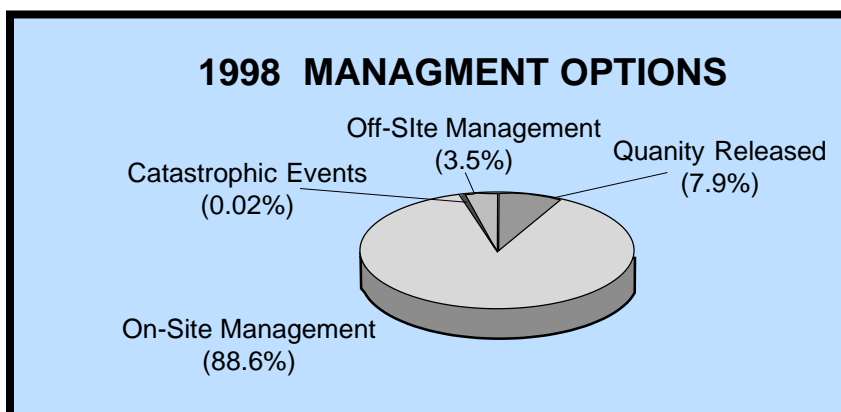
\* Not Reported

### 3.3 - Management Options

In 1990, Congress passed the Pollution Prevention Act (PPA) which established a hierarchy of waste management. Source reduction should be the preferred choice of waste management, followed by recycling, energy recovery, treatment, with disposal as the last option.

Section 8 of the Form R captures data under the PPA. The *Quality Released* represents the amount released to the environment or disposed by the facility. *Recycled On-Site* represents the amount recovered on-site and made available for further use. *Recycled Off-Site* represents the amount that left the facility for recycling. *Energy Recovery On-Site* represents the amount destroyed in the recovery device. *Energy Recovery Off-Site* represents the amount that left the facility bound for the recovery device. *Treated On-Site* represents the amount destroyed in treatment in treatment operations on-site and *Treated Off-Site* represents the amount that left the facility bound for treatment operations, not the amount destroyed at the off-site location. *Catastrophic Events* represent the amount not associated with routine production practices (also referred to as non-production related waste.).

1998  
Management  
Options



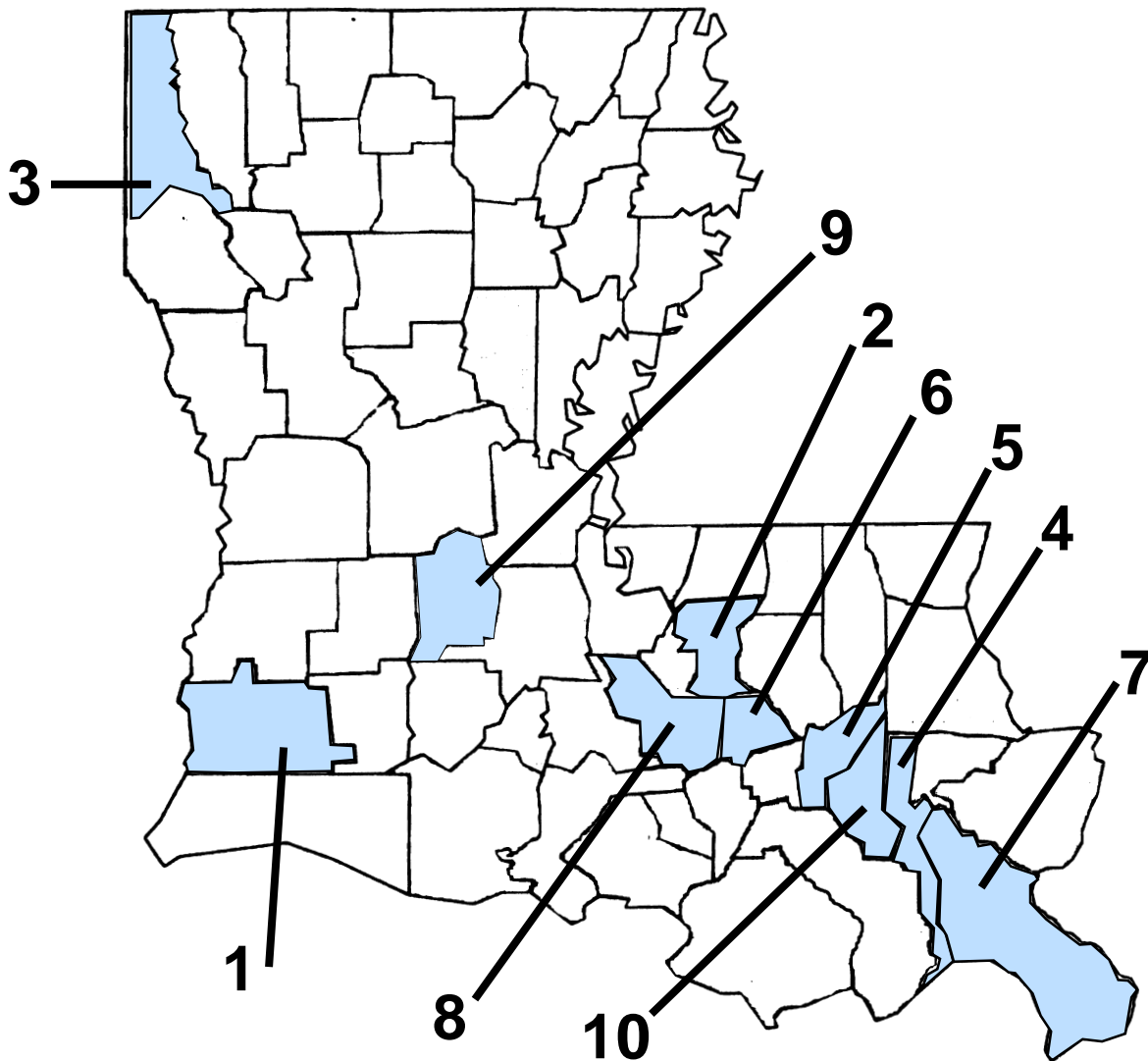
RELEASES ON-SITE		# POUNDS
Quantity Released		187,033,898
Percent of Total		7.9%
ON-SITE MANAGEMENT		# POUNDS
Energy Recovery		338,452,046
Recycle		887,792,733
Treatment		883,222,751
Total		2,109,467,530
Percent of Total Managed On-Site		88.6%
OFF-SITE MANAGEMENT		# POUNDS
Energy Recovery		19,449,286
Recycle		46,320,532
Treatment		17,225,408
Total		82,995,226
Percent of Total Managed Off-Site		3.5%
Catastrophic Events		375.472

### **3.4 - 1998 TRI Top 30 Facilities Ranked By Recycle Transfers**

<b>RANK</b>	<b>RECYCLE</b>	<b>FACILITY</b>	<b>PARISH</b>
1	9,421,686	FIRESTONE SYNTHETIC RUBBER	CALCASIEU
2	8,930,535	FORMOSA PLASTICS CORPORATION	EAST BATON ROUGE
3	7,038,000	GNB, INC. AUTOMOTIVE BATTERY DIV.	CADDO
4	6,483,921	CONDEA VISTA COMPANY	CALCASIEU
5	4,253,000	AVONDALE SHIPYARDS	JEFFERSON
6	1,456,045	BAYOU STEEL CORP.	ST. JOHN THE BAPTIST
7	783,611	HOBSON GALVANIZING - DIVISION	PLAQUEMINES
8	604,307	ALLIED SIGNAL	EAST BATON ROUGE
9	538,480	CF INDUSTRIES, INC.	ASCENSION
10	371,471	PELLERIN MILNOR CORPORATION	JEFFERSON
11	294,022	CONOCO LAKE CHARLES REFINERY	CALCASIEU
12	280,000	ASHLAND CHEM	IBERVILLE
13	256,243	CAMERON	EVANGELINE
14	249,969	BORDEN CHEMICAL AND PLASTICS	ASCENSION
15	211,879	EXXON BATON ROUGE REFINERY	EAST BATON ROUGE
16	190,532	UNION CARBIDE CORPORATION	ST. CHARLES
17	127,899	SHELL CHEMICAL COMPANY	ASCENSION
18	124,355	CITGO PETROLEUM CORPORATION	CALCASIEU
19	104,225	BAYOU COATING LLC	EAST BATON ROUGE
20	85,336	ACME TUBE	DE SOTO
21	75,000	BAKER OIL TOOLS	LAFAYETTE
22	71,590	NALCO CHEMICAL COMPANY	ST. JOHN THE BAPTIST
23	70,753	SAFETY KLEEN SYSTEMS	RAPIDES
24	70,586	ARCO CHEM	CALCASIEU
25	65,261	BP OIL CO ALLIANCE REF	PLAQUEMINES
26	65,261	CYTEC - FORTIER PLANT	JEFFERSON
27	58,379	ANGUS CHEM	OUACHITA
28	54,350	BOLLINGER SHIPYARDS LOCKPORT	LAFOURCHE
29	51,000	PCS NITROGEN FERTILIZER	LOCKPORT
30	46,982	KOCH NITROGEN CO.	OUACHITA

### 3.5 -1998 Total Transfers for Recycle Top Ten Parishes

RANK	PARISH	NO. OF FACILITIES	LAND
1	Calcasieu	29	16,453,994
2	East Baton Rouge	24	9,858,001
3	Caddo	19	7,042,423
4	Jefferson	25	4,702,186
5	St. John	12	1,536,791
6	Ascension	18	998,960
7	Plaquemines	6	849,108
8	Iberville	18	285,806
9	Evangeline	2	256,243
10	St. Charles	21	193,742



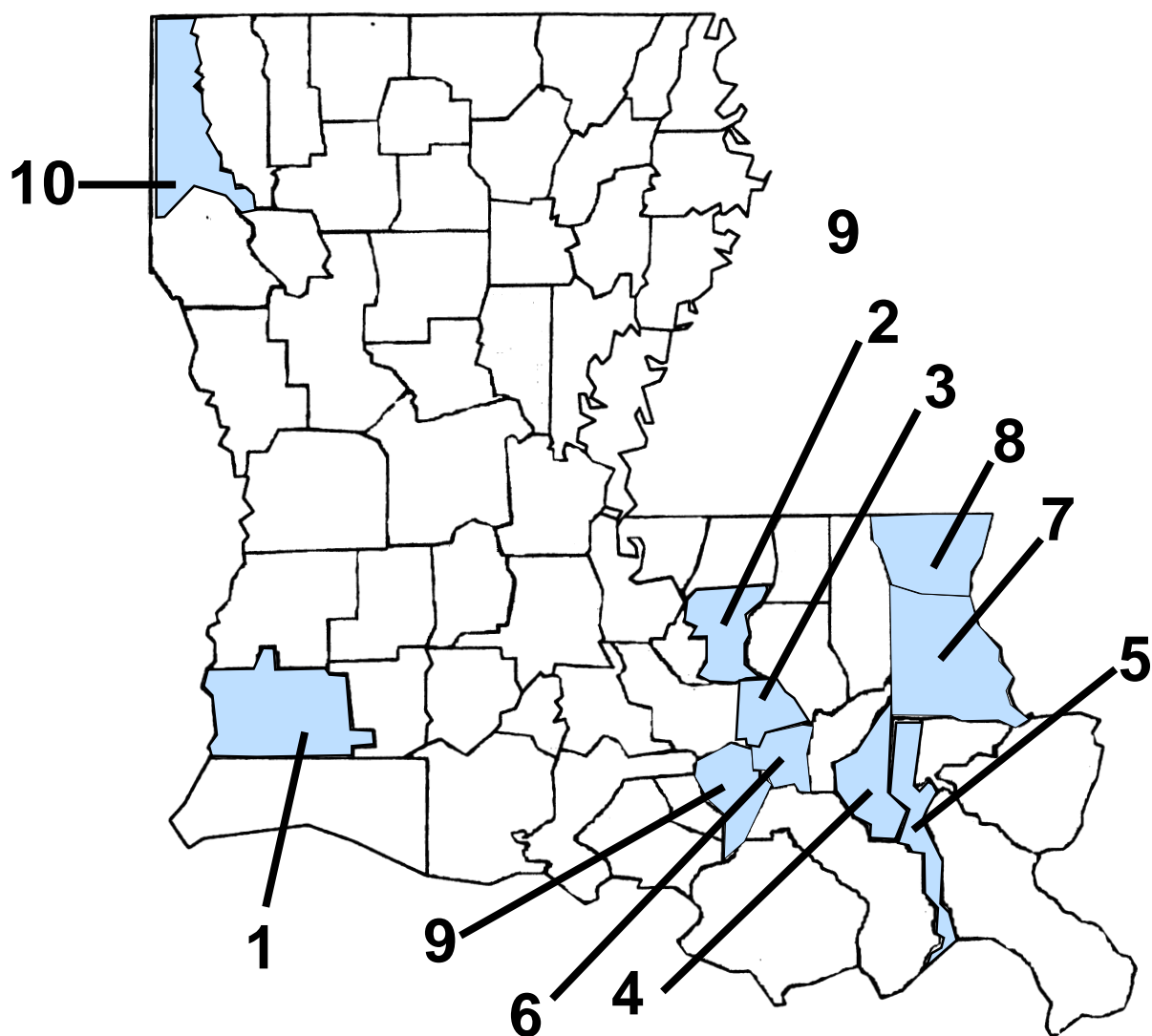
### **3.6 - 1998 TRI Top 30 Facilities Ranked by Energy Recovery Transfers**

<b>RANK</b>	<b>ENERGY</b>	<b>FACILITY</b>	<b>PARISH</b>
1	4,549,102	ARCO CHEM	CALCASIEU
2	4,286,910	EXXON CHEMICAL, BR CH	EAST BATON ROUGE
3	2,866,300	UNIROYAL CHEMICAL CO.	ASCENSION
4	2,458,365	FIRESTONE SYNTHETIC RUBBER	CALCASIEU
5	938,671	UNION CARBIDE CORP.	ST. CHARLES
6	550,840	SIGMA COATINGS USA B.V.	JEFFERSON
7	439,950	BASF CORPORATION	ASCENSION
8	349,112	SHELL OIL COMPANY - WEST	ST. CHARLES
9	322,560	LAROCHE INDUSTRIES INC.	ST. JAMES
10	319,200	CHEMLINK CO.	ST. TAMMANY
11	319,200	PEARL RIVER POLYMERS	ST. TAMMANY
12	254,954	ALBEMARLE CORP. PROCESS	EAST BATON ROUGE
13	218,000	GAYLORD CHEMICAL CORP.	WASHINGTON
14	164,996	GRANT CHEMICAL	EAST BATON ROUGE
15	146,900	AVONDALE SHIPYARDS	JEFFERSON
16	101,932	WESTVACO CORPORATION	BEAUREGARD
17	100,330	N. AMERICAN TRUCK PLATFORM	CADDO
18	95,095	WESTLAKE POLYMERS CORP.	CALCASIEU
19	92,193	WESTLAKE PETROCHEMICALS	CALCASIEU
20	82,400	AMELIA COATING PLANT	ASSUMPTION
21	77,861	CABOLINE COMPANY	CALCASIEU
22	71,863	INO, INC.	ASSUMPTION
23	65,144	BAKER PETROLITE	ACADIA
24	64,021	WITCO CORP. - HARVEY	JEFFERSON
25	37,354	MONTELL	CALCASIEU
26	19,200	LOCKHEED MARTIN	ORLEANS
27	14,920	ASHLAND DISTRIBUTION CO.	EAST BATON ROUGE
28	13,038	NALCO/EXXON ENERGY	LAFAYETTE
29	12,727	CONDEA VISTA COMPANY	CALCASIEU
30	12,501	RHODIA	EAST BATON ROUGE



### 3.7 -1998 Total Transfers for Energy Recovery Top Ten Parishes

RANK	PARISH	NO. OF FACILITIES	LAND
1	Calcasieu	29	7,337,509
2	East Baton Rouge	24	4,747,316
3	Ascension	18	3,306,250
4	St. Charles	21	1,295,194
5	Jefferson	25	777,645
6	St. James	9	325,003
7	St. Tammany	5	319,200
8	Washington	2	218,000
9	Assumption	3	154,263
10	Caddo	19	102,980

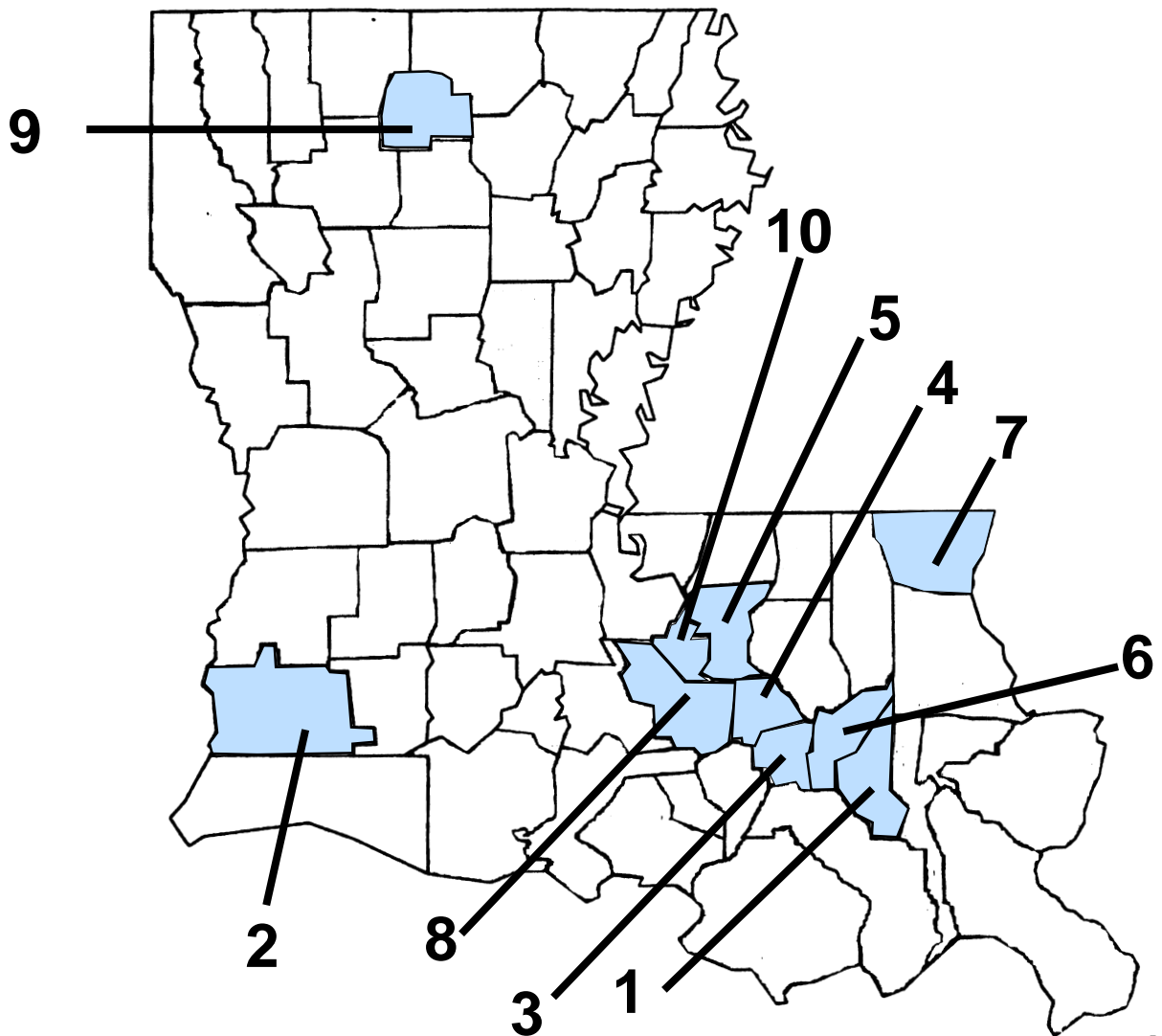


### **3.8 - 1998 TRI Top 30 Facilities Ranked By Waste Treatment Transfers**

<b>RANK</b>	<b>WASTE</b>	<b>FACILITY</b>	<b>PARISH</b>
1	4,952,800	SHELL OIL COMPANY - EAST	ST. CHARLES
2	2,055,452	MOTIVA ENTERPRISES LLC	ST. CHARLES
3	1,496,681	CYPRESS CATALYST PLANT	ST. CHARLES
4	1,363,874	OCCIDENTAL CHEM CORP.	ST. JAMES
5	806,952	PPG INDUSTRIES, INC.	CALCASIEU
6	746,280	UNION CARBIDE CORP.	ST. CHARLES
7	601,233	BASF CORPORATION	ASCENSION
8	591,676	ARCO CHEM	CALCASIEU
9	432,283	GAYLORD CHEMICAL CORP.	WASHINGTON
10	425,391	RUBICON, INC.	ASCENSION
11	295,347	SAFETY KLEEN, INC.	EAST BATON ROUGE
12	275,006	DUPONT DOW ELASTOMERS	ST. JOHN THE BAPTIST
13	250,536	ANGUS CHEM	OUACHITA
14	223,045	GEORGIA GULF CORP.	IBERVILLE
15	191,936	ALLIED SIGNAL	EAST BATON ROUGE
16	168,384	CONDEA VISTA COMPANY	CALCASIEU
17	155,710	AIR PRODUCTS & CHEMICALS	ASCENSION
18	146,592	EXXON CHEMICAL - BR CHEM.	EAST BATON ROUGE
19	109,915	BAYOU STEEL CORP.	ST. JOHN THE BAPTIST
20	97,250	DSM COPOLYMER, INC.	WEST BATON ROUGE
21	94,097	ALBEMARLE CORP. PROCESS	EAST BATON ROUGE
22	82,353	UNIROYAL CHEMICAL	ASCENSION
23	75,735	SHELL OIL COMPANY - WEST	ST. CHARLES
24	56,991	OLIN CORPORATION	CALCASIEU
25	55,904	DUPONT PONT. WORKS	ST. JOHN THE BAPTIST
26	53,988	AIR PRODUCTS CHEM	IBERVILLE
27	52,462	BAKER MFG	RAPIDES
28	51,101	OCCIDENTAL CHEM CORP.	ST. CHARLES
29	50,751	BORDEN CHEMICAL	ASCENSION
30	43,000	BERCEN INC.	LIVINGSTON

### 3.9 -1998 Total Transfers for Waste Treatment Top Ten Parishes

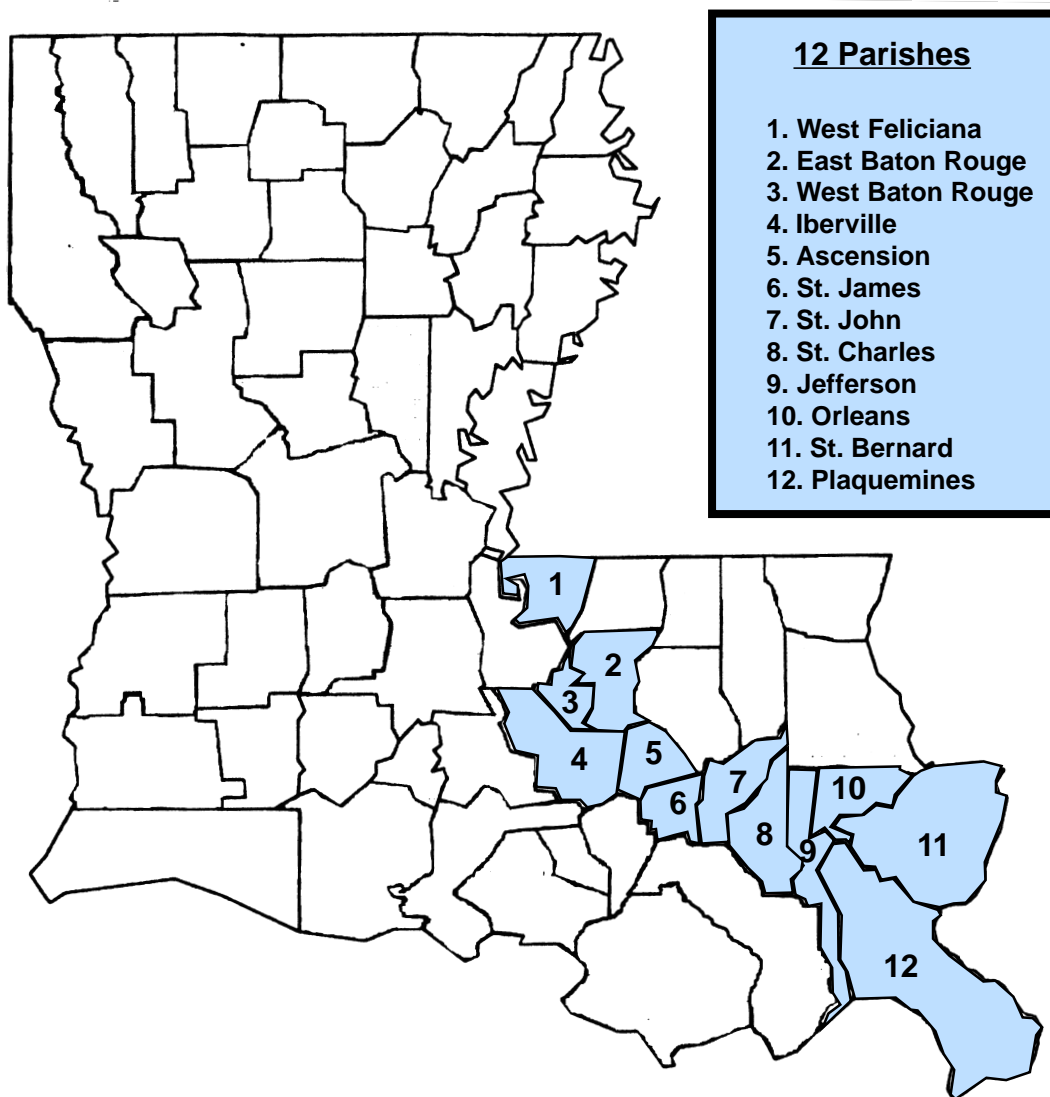
RANK	PARISH	NO. OF FACILITIES	LAND
1	St. Charles	21	9,429,049
2	Calcasieu	29	1,640,726
3	St. James	9	1,368,173
4	Ascension	18	1,353,214
5	East Baton Rouge	24	735,852
6	St. John	12	467,753
7	Washington	2	432,283
8	Iberville	18	318,820
9	Ouachita	9	250,786
10	West Baton Rouge	10	100,965



Chapter 4

## **Mississippi River Industrial Corridor**

The Mississippi River Industrial Corridor consists of 12 parishes bordering along the Mississippi River, extending southward from West Feliciana Parish to Plaquemines Parish. In addition to West Feliciana and Plaquemines Parishes, the Corridor consists of the following parishes: East and West Baton Rouge, Iberville, Ascension, St. James, St. John, St. Charles, Orleans, Jefferson and St. Bernard.



Mississippi River  
Industrial Corridor

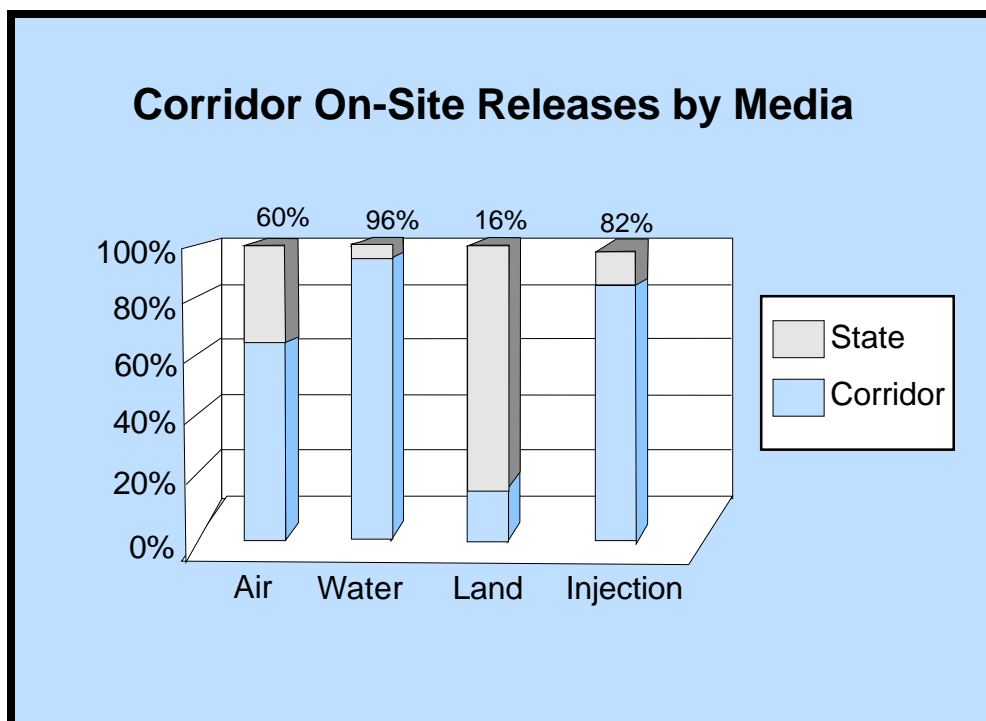
Approximately 48% of all TRI reporting facilities are located within these parishes. Corridor parishes comprise approximately 69% (129 million pounds) of the state's total releases. Ascension Parish leads the Corridor Parishes with the largest number of total releases. With 18 reporting facilities, Ascension Parish reported over 50 million pounds in total releases. Jefferson Parish followed in the Corridor with total releases of approximately 22 million pounds and had the largest number of reporting facilities (25). By media, Ascension Parish ranked top in air and water discharges, with 18 million and 21 million pounds respectively. St. James ranked top in the Corridor for on-site land releases with almost 1 million pounds and Jefferson ranked top in underground injection with almost 22 million pounds. The table below shows the ranking of all Corridor parishes by total releases. The releases by media for the Corridor Parishes are shown in the chart on the following page.

**1998 Corridor Parishes Releases**

Parish	State Rank	# of Facilities	Releases in pounds
Ascension	1	18	50,843,254
Jefferson	2	25	22,794,000
St. James	3	9	17,200,995
St. Charles	4	21	14,962,893
EBR	7	24	12,380,250
Iberville	9	18	5,228,700
St. John	18	12	1,311,597
WBR	20	10	1,258,475
Plaquemines	21	6	1,074,309
W. Feliciana	22	1	979,811
St. Bernard	23	3	930,155
Orleans	26	9	368,140
<b>Corridor Totals</b>		<b>156</b>	<b>129,332,579</b>
<b>State Totals</b>		<b>327</b>	<b>186,585,206</b>

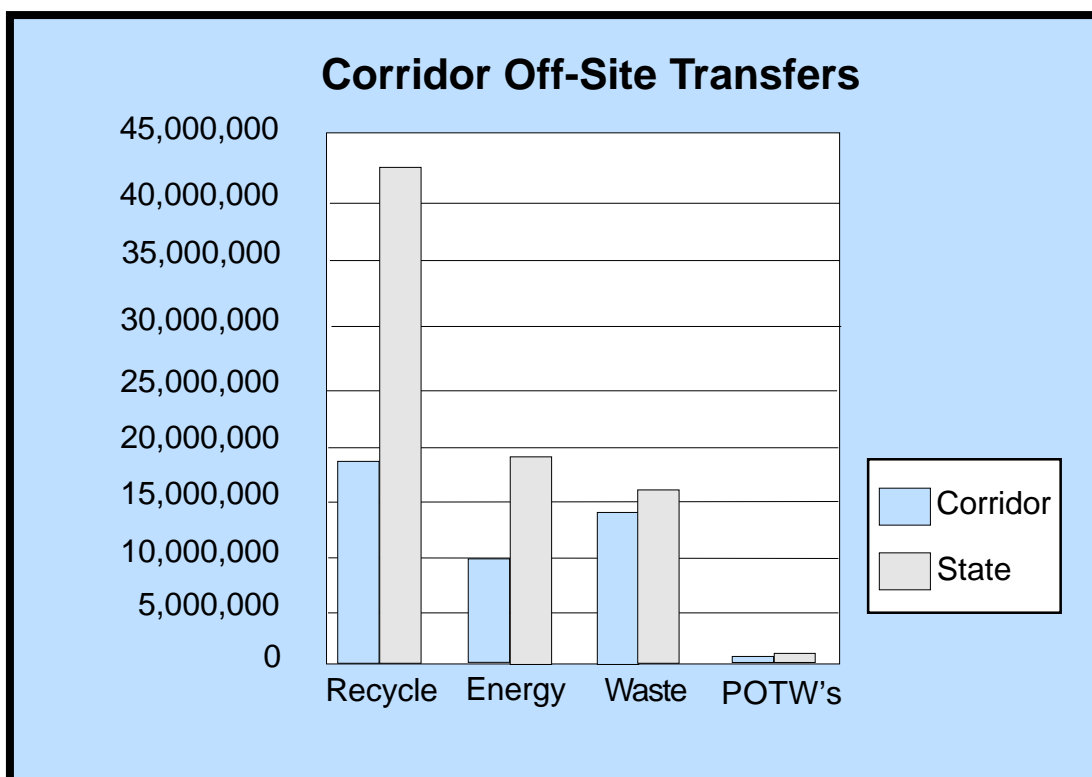
### Mississippi River Industrial Corridor

In comparing media totals for the Corridor to the overall state totals, air releases were approximately 60% (47,270,785 pounds) of the state total. Corridor water releases accounted for approximately 96% (35,656,749 pounds) of the state total. Corridor land releases account for approximately 16% (2,685,614 pounds) of the state total while deepwell injection by the Corridor facilities account for 82% (43,894,709 pounds). The data for on-site releases in the Mississippi River Corridor are presented in the graph below.



### Mississippi River Industrial Corridor

In off-site transfers for the Corridor, East Baton Rouge led all parishes in recycling (approximately 10 million pounds), energy recovery (approximately 5 million pounds), and disposal (approximately 16 million pounds). St. Charles Parish led all parishes in waste treatment (approximately 9 million pounds). Only two parishes in the Corridor reported transfers to Publicly Owned Treatment Works (POTWs). Jefferson reported approximately 30,000 pounds and Orleans reported less than 1,000 pounds. Off-site transfers for the Corridor Parishes are shown in the chart below.



Chapter 5.

## Volunteer Programs

Many corporate citizens have responded to the call to reduce chemical releases by going above and beyond regulatory requirements and participating in voluntary pollution prevention programs. Louisiana's Environmental Leadership Program (LaELP) invites corporate citizens to join the program by outlining voluntary reduction goals through the year 2000. Partnership companies agree to provide DEQ with annual information, including TRI data, to track their progress. At the annual awards program, participating companies are recognized for their achievements in voluntary pollution prevention strategies. The 1999 award recipients are presented below.

### 1999 Governor's Environmental Leadership Awards

Governor Mike Foster presented 18 facilities and 2 organizations with a total of 23 awards to recognize initiative and excellence in pollution prevention and community outreach involvement. The Governor's Awards ceremony was held at the State Capitol on April 7, 1999. The awards were given to companies in the Louisiana Environmental Leadership Pollution Prevention Program that have implemented outstanding pollution prevention projects during the past year.

[To join the LaELP](#), a company commits to a set of environmental principles and standards and agrees to submit to the DEQ a brief pollution prevention plan containing voluntary waste reduction goals. The program has been active since August 1995. Any company committed to improving the quality of Louisiana's environment is eligible to join.

**Chevron Chemical, Oronite Additives Division, Oak Point Plant, Belle Chasse -1999 LaELP Outstanding Pollution Prevention Achievement Award** for designing and installing a centrifuge that eliminates 4.8 million pounds of solid and liquid waste each year. (*Harold Bufford, Compliance Manager; Timoteo Almieda, Public Affairs Representative; Jim Peebles, Community Advisory Panel; and Jim Lomax, Plant Manager*)

**DuPont Dow Elastomers, Pontchartrain Site, LaPlace- 1999 LaELP Outstanding Pollution Prevention Achievement Award** for eliminating the generation of 2.8 million pounds of hazardous waste per year by applying the pollution prevention principles of process optimization and materials substitution. (*Accepted by Jack Hinson, First Line Supervisor; Junius Roussell, Production Operator; Calvin Keller, Community Advisory Panel member; and Claude Baptiste, First Line Supervisor*)



**Exxon Chemical Americas, Baton Rouge Chemical Plant, Baton Rouge - 1999 LaELP Outstanding Pollution Prevention Achievement Award** for employing new ceramic membrane technology to reduce TOD loading of its wastewater treatment by 950,000 pounds per year. (Accepted by Dave Holladay, Vinyl Operations Department Manager; Bill Rainey, Chemical Plant Manager; Phyllis Holifield, Intermediates Environmental Contact; and Teresa Jurgens-Kowal, Senior Research Engineer)

**Marathon Ashland Petroleum LLC, Garyville - 1999 LaELP Outstanding Pollution Prevention Achievement Award** for expanding and upgrading the heavy gas oil hydrotreater to produce a gasoline that has one-fifth the regulatory limit for sulfur, thus reducing the nation's sulfur dioxide emissions by 2.1 million pounds per year. (Accepted by Larry Echelberger, Division Manager; Greg Wilkins, E&S Manager, and Faye Gerard, Environmental Coordinator)

**Monsanto Company, Luling - 1999 LaELP Outstanding Pollution Prevention Achievement Award** for substantial reduction in waste generation and resource consumption by installing a new generation glyphosate manufacturing process. (Accepted by Sarah Verrett, Process Engineer; Stephen Pfister, Unit Specialist; Veronica Ware-Walker, Production Engineer; Derek Bergeron, Process Engineer, and Mike Keeley, Manufacturing Supervisor)

**PPG Industries, Lake Charles - 1999 LaELP Outstanding Pollution Prevention Achievement Award** for eliminating 6,700 tons per year of solid waste by improvements to its manufacturing process for precipitated silica products. (Accepted by Wayne Minor, Purchasing Agent/Engineer; Robert Dalton, Project Design Engineer; Casey Colter, Lead Operator/Temporary Foremen, and Bryant Bartie, Lead Operator)

**Scapa Rolls, Minden - 1999 LaELP Outstanding Pollution Prevention Achievement Award** for reducing hazardous waste generation by 25 percent by developing a multiple stage parts washing process, adding a solvent settling stage and introducing a non-hazardous solvent. (Accepted by Carl Mayer, Vice President and Plant General Manager)

**Uniroyal Chemical Company, Geismar - 1999 LaELP Outstanding Pollution Prevention Achievement Award** for reducing 500,000 pounds per year of generated hazardous waste and 150,000 pounds of TRI reportable emissions by developing and utilizing a recovery and recycling strategy. (Accepted by Jay Patel, Environmental Manager; Vince Stadolnik, Factory Manager, and Ernest Jewell, Production Superintendent)

**Vulcan Chemicals, Geismar - 1999 LaELP Outstanding Pollution Prevention Achievement Award** for reducing TRI emissions by 26 percent by applying the source reduction principle in process improvements to its chloromethanes facility. (Accepted by Bhala Kanade, Production Superintendent; Brad Stahlecker, Technical Manager; Linn Fink, Environmental Group Leader; Vito Fiore, Plant Manager, and Brian Johnson, Engineer Manager)

**BP Oil Company, Alliance Refinery, Belle Chasse - 1999 LaELP Special Citation for Pollution Prevention Achievement** for innovations to perfect on-line de-sludging of aboveground storage tanks to substantially reduce emissions and risk of exposure. (Accepted by Alan Stobbe, BP Technical Engineer; Henry Hethcoat, BP Director of Environmental Services; Randy Borne, BP Waste Coordinator; Ken Landry, President of Landry Services Company)

**CAMECO Industries, Inc. Thibodeaux - 1999 LaELP Special Citation for Pollution Prevention Achievement** for reducing hazardous air pollutant emissions 95 percent by reformulating industrial paints and substantially changing manufacturing and scheduling. (Accepted by Dewey Gravois, Safety and Environmental Manager; Ken Rodrique, Vice President of Engineering and Production, and Francis Richard, Production Manager)

**Joint Readiness Training Center & Fort Polk, Fort Polk - 1999 LaELP Special Citation for Pollution Prevention Achievement** for substantially reducing the generation of waste solvent by revamping industrial operations and introducing recycling part washers. (Accepted by Jeff Ross, Radian International; Christine Gettys Hull, Ph.D., Fort Polk P2 Coordinator; Lieutenant Colonel Stephen Sharp, Fort Polk Director of Public Works)

**Koch Pipeline Company, Ammonia Division, Sterlington - 1999 LaELP Special Citation for Pollution Prevention Achievement** for reducing ammonia emissions to the atmosphere 91 percent by replacing mainline block valves and introducing improved measurement and control instrumentation. (Accepted by Dawn Holtmeyer, Public Awareness Coordinator and Kelly Jones, Environmental Compliance Manager)

**Lockheed Martin Michoud Space System, New Orleans - 1999 LaELP Special Citation for Pollution Prevention Achievement** for exceeding regulatory requirements by phasing out use of an ozone-depleting chemical while adhering to stringent quality requirements for manned space flight. (Accepted by August Panks, Manager, Production Operations; Francis Celino, NASA; Becky Jordan, Chief, Pollution Prevention Projects, and Rey Abadie, Director, Facilities and Environmental Operations)

**Rubicon Inc, Geismar - 1999 Special Citation for Pollution Prevention Achievement** for reducing carbon monoxide emissions by 1,174 tons per year through multiple process improvements. (Accepted by Henry Pine, Production Manager; John DeLaney, Vice President and General Manager; Michelle Eaglin, Environmental Engineer, and Don Jennings, Process Engineering Supervisor)

**Barksdale Air Force Base - 1999 LaLEP Outstanding Community Outreach Achievement Award** for hosting Earth Day 1998 Youth Summit, teamed with the U.S. Environmental Protection Agency, Region 6. (Accepted by Colonel Dave Lay, SSgt Dan Warehime, Mr. Brian Larrimer, and TSgt Bill Lee)

**Georgia Gulf Corporation, Plaquemine - 1999 LaELP Outstanding Community Outreach Achievement Award** for quality of life improvement projects and management systems verification audit. (Accepted by Will Hinson, Public Affairs Manager; Stella Trepagnier, Community Advisory Panel member (teacher); Rebecca Bentley, Public Affairs Specialist, and Dave Magee, General Manager)

**Koch Pipeline Company, Ammonia Division, Sterlington - 1999 LaELP Special Citation for Community Outreach Achievement** for a pilot project with the Louisiana State Police for electronic reporting of hazardous materials incidents and emergency notifications plus exemplary involvement of communities in Koch's Northeast Region. (Accepted by Kelly Jones, Environmental Compliance Manager and Dawn Holtmeyer, Public Awareness Coordinator)

**PPG Industries, Lake Charles - 1999 LaELP Community Outreach Achievement Award** for Naturelab—Classroom in the Woods, a premiere natural habitat learning center. *(Accepted by Lori Marinovich, Vinton High School Biology Teacher; Marie Reed, LaGrange (Lake Charles) High School Biology Teacher; Meg Pharr, PPG Civil Engineer, and Charles Berry, PPG Maintenance Area Foreman)*

**Shell Norco Chemical Plant/Norco Refining Company, Norco - 1999 LaELP Outstanding Community Outreach Achievement Award** for creation of the River Road Museum, dedicated in October 1998 to residents of the River Region. *(Accepted by Don Baker, External Affairs Manager-Shell/Motiva, and Clarisse Webb, Museum Committee Chairperson)*

**Vulcan Chemicals, Geismar - 1999 LaELP Special Citation for Community Outreach Achievement** for being instrumental in establishing recycling and garbage collection programs in Ascension Parish and organizing the Great Ascension Trash Bash. *(Accepted by Bhala Kanade, Production Superintendent; Vito Fiore, Plant Manager; Brad Stahlecker, Technical Manager; Brian Johnson, Engineer Manager, and Linn Fink, Environmental Group Leader)*

**St. Charles and St. John the Baptist Parishes Industry - 1999 LaELP Outstanding Multi-Company Community Outreach Project** for organizing and implementing a Household Hazardous Material Collection Day activity. Eleven industrial participants include DuPont, DuPont Dow Elastomers, Marathon Ashland Petroleum, Monsanto, Montell Polyolefins, Motiva, Nalco, OxyChem, Stockhausen, Union Carbide and Shell Norco. *(Accepted by Lynette Currier, Occidental Chemical Company (Taft) Environmental Engineer; Faye Gerard, Marathon Ashland Petroleum Environmental Coordinator; Clarence Dykstra, DuPont Dow Elastomers SHEA Manager; Whitney Hickerson, DuPont Community Relations Manager; Dionne Randolph, Union Carbide Specialist – Health, Safety and Environmental; Fred Goodson, Norco Shell Waste Program Coordinator; Jackie Donaldson, Stockhausen Environmental and Safety Manager; Andrea Morrisard, Monsanto Environmental Engineer)*

**Lake Charles Industry Alliance/CONDEA Vista, Westlake - 1999 LaELP Special Citation for Multi-Company Community Outreach Project** for organizing and conducting an Annual Paint Recycling event in conjunction with the lake Charles Trash Bash program in celebration of Earth Day. (Top Photo: *Accepted by Nancy Tower, CONDEA Public Relations.* Bottom Photo: *Accepted by Rusty Whaley, Chemical Waste Management; Cheryl Bebee, GRACE Davison; and Ken Anderson, Chemical Waste Management*)

For more information, contact:

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Chapter 6

## 1998 Facility Highlights

Annually, facilities are asked to provide information on any operational changes that contributed to the increase/decrease in releases for the reporting year. The following section summarizes the information provided by the 1998 reporters.

**Air Products and Chemicals, Iberville Parish** – increase in air emissions due to increased production.

**Albemarle Corp. Process, EBR Parish** – decrease in toluene air emissions due to improved process controls.

**Allied Signal Inc.-South Works, EBR** – increase in air releases primarily due to increased production.

**Arco Chemicals, Calcasieu Parish** – decrease in water discharges due to source control of nitrogen compounds.

**Arizona Chemical, Allen Parish** – increase in air releases due to an increased production of rosin.

**Bercen, Inc., Livingston Parish** – increase in air releases due to increased production.

**Bioproducts, Iberville Parish** – increase in plant emissions due to full operation of the facility compared to partial operation in 1997.

**Bollinger Larose, L.L.C., Lafourche Parish** – decrease in releases due to changes in customer specified paints production variations and reformulated paints by their manufacturers.

**Bollinger Marine Fabricators, L.L.C., St. Mary Parish** – decrease in releases due to changes in specified paints, production variations and reformulation of paints by their manufacturers.

**Bollinger Shipyards Lockport, L.L.C., Lafourche Parish** – decrease in releases due to changes in customer specified paints production variations and reformulated paints by their manufacturers.

**Bunge Corporation, St. Charles Parish** – increase in releases due to increased facility processing activity.

**Cabot Corp., St. Mary Parish** – decrease in air releases due to changes in operation of incinerator.

**Calcasieu Refining Company, Calcasieu Parish** - increase/decreases are primarily due to the use of the latest suggested calculation methods for emission estimates.

**CBI Services, Inc., Livingston Parish** – decrease in off-site releases due to change in operations from disposal to recycle.

**Cerro Copper Tube Company, Bossier Parish** – decrease in air emissions due to change in operation, eliminating any emissions from the molten casting furnaces and the recycling operation.

**CF Industries, Ascension Parish** – increase in ammonia air releases due to increased production of urea in the new unit; decrease in methanol air releases due to the process of carbon dioxide contaminated with methanol by the new urea unit.

**Chalmette Refining, St. Bernard Parish** – increase in releases due to new chemical specification, improved calculation methods and increased production..

**Chevron Chemical Company-St. James Plant, St. James Parish** – increase in air emissions due to increased production

**Columbian Chemicals Company, St. Mary Parish** – decreased air releases due to installation of a new incinerator.

**CP Louisiana, Inc., Jefferson Parish** – decrease due to a change in the formula of one of our coatings and a slight change in our product mix.

**DuPont Specialty Chemicals, St. John Parish** – decrease due to been waste minimization, tight control of fugitive emissions and yield improvements.

**Equilon Enterprises LLC, Jefferson Parish** – decrease due to the changes in formulas and deleting of several products. This enables us to use fewer additives.

**Exxon Chemical Americas, EBR Parish** – increase in air emissions due to increased production and increased calculated air emissions from wastewater treatment.

**Exxon Chemical Company-Baton Rouge Plastics Plant, EBR Parish** – increase due to increased production and change in production grades.

**Exxon Chemical Company-Resin Finishing Plant, EBR Parish** – increase due to fugitive emission factor changes; water decrease due to decreased inlet loading to the waste water treatment system (not associated with a source reduction activity).

**Farmland Industries, Inc., Grant Parish** - decrease in methanol emissions is due to aging Low Temperature shift catalyst.

**Gaylord Chemical Corp. , Washington Parish** - decrease due to production decrease and new on-site use reduction project.

**Georgia Pacific Corp.-Port Hudson Operations , EBR Parish** – decrease due to the elimination of elemental chlorine use in the facility's paper bleaching processes.

**Gretna Machine and Iron Works , Jefferson Parish** - increase due to increased production.

**IMC-Agrico Co.-Taft Plant, St. Charles Parish** - increase in air emission due to increase of production at the Taft facility; increase in water release due to the exceptionally high rainfall received during certain months in 1998.

**IMC Agrico Company-Uncle Sam Plant, St. James Parish** - increase in air emissions and water due to increased production; decrease in the release to land due to better recovery of nutrients in the waste water system.

**International Paper-LA Mill , Morehouse Parish** - decrease due to reduced production versus the previous year.

**International Paper Co.-Springhill Wood Products, Webster Parish** – increase/decrease due to updated NCASI emission factors.

**International Paper-Pineville , Rapides Parish** - decrease in releases to land on site due to decrease in the amount of mill residuals being landfilled.

**Koch Nitrogen Co., Ouachita Parish** – decrease in water releases for ammonia due to replacement of leaking exchangers and improved operations.

**LaRoche Industries-Gramercy, St James Parish** – decrease due to preventive maintenance, CFC/HCFC refrigerant replacement in plant chilling systems, and decreased production.

**Lockheed Martin , Orleans Parish** – increase due to material substitution.

**Marathon Ashland Petroleum-LA Refining Division , St. John Parish** – decrease in fugitive emissions due to improved maintenance.

**Motiva Enterprises-Convent Refinery , St. James Parish** - decrease in water releases due to an increased monitoring frequency; decrease in fugitive equipment emissions and tank emissions through the implementation of a lower leak threshold under the facility's consolidated LDAR program and the installation of improved floating roof tank seals, respectively.

**Nalco Chemical Company, St. John Parish** – decrease in air emissions due to the manufacture of products containing less TRI chemicals.

**North American Truck Platform, Caddo Parish** - increase due primarily to a production increase.

**Northrop Grumman , Calcasieu Parish** – increase due to an increase in production activities.

**Occidental Chemical Corp. , St. Charles Parish** - decrease in water releases due to increased monitoring and improved process control methods for the chlorine purification process.

**PCS Nitrogen, Ascension Parish** - decrease due to TRI Reduction Plan, which minimized the release of water containing low concentrations of phosphoric acid. Weather related impacts assisted in this regard as low rainfall was noted in the last two quarters of 1998.

**Praxair, Inc., Ascension Parish** - decrease due to more re-cycling of the products.

**Rubicon, Inc., Ascension Parish** – increase in air emissions due to change in the basis for emissions estimations/calculations; decrease in underground injection releases due various reduction projects the shutdown of a production unit that released nitrates to the injection wells.

**Shell Chemical Co.-Reserve Plant, St. John Parish** - decrease in releases due to reduced production.

**Shell Chemical Company-Taft Plant, St. Charles Parish** - increase in emissions due to increased production.

**Steel Fabricators of Monroe, Ouachita Parish** – decrease in releases due to change in our product mix.

**Stockhausen LA, LTD, St. John Parish** - increase in releases due to production increase.

**Stupp Corporation, EBR Parish** - decrease in emissions due to decreased production.

**Superior Tie & Timber , Caddo Parish** - increase in emissions due to increased production.

**Trus Joist MacMillan, Natchitoches Parish** – increase due to increased production.

**Union Carbide Corp.-Cypress Catalyst Plant , St. Charles Parish** - decrease in air releases due to the use of more efficient management systems and heightened awareness.

**Union Carbide Corp.-Cypress Polypropylene Plant , St. Charles Parish** - increase in air releases due to production increase.

**Uniroyal Chemical Company, Inc., Ascension Parish** – increase air emissions due to increased production and a change in the basis of calculation; decrease underground injection emissions due to use of new process knowledge that lowered emissions counting.



**United States Marine, Inc., Orleans Parish** - increase air emissions due to increased business and material consumption/handling in 1998.

**Waterbury Companies, Tangipahoa Parish** - decrease in emissions of 1,1,1-Trichloroethane due to material substitution.

**Westlake Petrochemicals Corp. , Calcasieu Parish** – increase emissions due to increased capacity.

**Westlake Polymers Corp., Calcasieu Parish** – decrease emissions due to a reduction in episodic events, refinement of flare calculations and full year utilization to bagging study data to estimate fugitive emission; decrease water releases due to product substitution.

**Westvaco, Beauregard Parish** – decrease due to installation of air control devices on two tanks at the waste treatment unit for these streams; decrease in land and water releases due to decreased production.

**Willamette Industries, Inc.-Red River Paper Mill, Natchitoches Parish** - ammonia increased due to an increase in the emissions factor; manganese compounds decreased due to a decrease in the concentration factor, and methanol decreased due to a kraft pulp production decrease.

**Wilsonart International, Livingston Parish** - decrease in emissions due to product substitution.

**W.R. Grace & Co.-Grace Division, Calcasieu Parish** – decrease in fugitive air emissions due to better controls; increase in water releases due to one-time inadvertent mixing of acids.



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# APPENDIX

## 1997 TOP STATES\*

### 1997 Total Releases On-Site (in pounds)

1	Texas	240,348,142
2	Louisiana	183,777,629
3	Ohio	113,127,277
4	Tennessee	97,955,094
5	Illinois	94,567,818

### 1997 Total Releases To Air (in pounds)

1	Texas	108,366,675
2	Tennessee	81,947,095
3	Louisiana	74,838,852
4	Ohio	66,806,601
5	Utah	65,561,602

### 1997 Total Releases To Water (in pounds)

1	Louisiana	46,909,318
2	Pennsylvania	38,517,920
3	Texas	20,788,710
4	Mississippi	11,945,812
5	Florida	8,636,614

### 1997 Total Releases to Class I Wells\* (in pounds)

1	Texas	89,929,406
2	Louisiana	54,243,582
3	Florida	27,506,942
4	Ohio	11,584,640
5	Tennessee	9,273,267

\*No facilities reported releases to Class II-V Wells.

**1998 TRI Top 376 Facilities Ranked by Total**

RANK	TOT	FACILITY	PARISH
1	22,119,671	PCS NITROGEN FERTILIZER,L.P.	ASCENSION
2	19,905,208	CYTEC - FORTIER PLANT	JEFFERSON
3	12,807,327	IMC-AGRICO CHEMICAL CO.-FAUSTI	ST. JAMES
4	9,712,560	ANGUS CHEM	OUACHITA
5	9,240,489	MONSANTO COMPANY	ST. CHARLES
6	8,924,959	RUBICON, INC.	ASCENSION
7	5,987,795	CF INDUSTRIES, INC.	ASCENSION
8	5,158,974	INTERNATIONAL PAPER, MANSFIELD	DE SOTO
9	5,016,482	BIG CAJUN 2	POINTE COUPEE
10	4,488,867	EXXON BATON ROUGE REFINERY	EAST BATON ROUGE
11	3,803,805	CHEMICAL WASTE MANAGEMENT	CALCASIEU
12	3,762,540	BOISE CASCADE CORPORATION	BEAUREGARD
13	3,486,931	TRIAD NITROGEN, INC.	ASCENSION
14	3,446,819	CLECO CORPORATION - DOLET HILL	DE SOTO
15	3,351,153	IMC-AGRICO CHEMICAL CO.	ST. JAMES
16	3,225,675	LOUISIANA PIGMENT COMPANY L.P.	CALCASIEU
17	3,179,863	BORDEN CHEMICAL AND PLASTICS	ASCENSION
18	2,850,406	UNIROYAL CHEMICAL CO., INC.	ASCENSION
19	2,602,015	RIVERWOOD INT. - PLANT #31	OUACHITA
20	2,434,588	WITCO CORP. - HARVEY/GRETNA	JEFFERSON
21	2,263,960	THE DOW CHEMICAL COMPANY,	IBERVILLE
22	2,212,571	CITGO PETROLEUM CORPORATION	CALCASIEU
23	2,073,907	GEORGIA PACIFIC CORP.-PORT HUD	EAST BATON ROUGE
24	1,896,263	EXXON CHEMICAL, BATON ROUGE	EAST BATON ROUGE
25	1,843,810	STONE - HODGE, INC.	JACKSON
26	1,793,352	FIRESTONE SYNTHETIC RUBBER	CALCASIEU
27	1,772,417	ALLIEDSIGNAL	EAST BATON ROUGE
28	1,729,550	GAYLORD CONTAINER CORPORATION	WASHINGTON
29	1,690,324	BASF CORPORATION	ASCENSION
30	1,566,471	INTERNATIONAL PAPER - LA MILL	MOREHOUSE
31	1,473,169	WILLAMETTE INDUSTRIES INC.	NATCHITOCHES
32	1,463,957	NOVARTIS CROP PROTECTION, INC.	IBERVILLE
33	1,392,739	EXXON CHEMICAL COMPANY	EAST BATON ROUGE
34	1,300,850	INTERNATIONAL PAPER -PINEVILLE	RAPIDES
35	1,292,942	FARMLAND INDUSTRIES INC.	GRANT
36	1,135,437	SHELL OIL COMPANY - EAST	ST. CHARLES
37	979,811	CROWN PAPER COMPANY	WEST FELICIANA
38	977,585	SHELL CHEMICAL COMPANY	ASCENSION
39	963,784	WITCO CORPORATION - POLYMER	ST. CHARLES
40	928,334	MOTIVA ENTERPRISES LLC	ST. CHARLES
41	910,392	PENNZOIL PRODUCTS COMPANY	CADDO
42	876,866	UNION CARBIDE CORPORATION, TAF	ST. CHARLES
43	838,974	CHEVRON CHEMICAL COMPANY, OAK	PLAQUEMINES
44	712,355	DSM COPOLYMER, INC.	WEST BATON ROUGE
45	667,396	PPG INDUSTRIES, INC.	CALCASIEU
46	651,500	UNION TEXAS PRODUCTS CORP.	ASCENSION
47	614,242	STAR ENTERPRISE	ST. JAMES
48	602,852	DUPONT DOW ELASTOMERS L.L.C.,	ST. JOHN THE BAPTIST

## *Louisiana Toxics Release Inventory Report - 1998*

51	560,753	DU PONT PONTCHARTRAIN WORKS	ST. JOHN THE BAPTIST
52	559,924	NORTH AMERICAN TRUCK PLATFORM	CADDO
53	557,942	MELAMINE CHEMICALS, INC.	ASCENSION
54	554,829	CHALMETTE REFINING L.L.C.	ST. BERNARD
55	530,492	SAFETY KLEEN INC	IBERVILLE
56	527,349	SHELL OIL COMPANY - WEST	ST. CHARLES
57	517,020	CONDEA VISTA COMPANY	CALCASIEU
58	516,239	GEORGIA GULF CORPORATION	IBERVILLE
59	426,500	SID RICHARDSON CARBON	WEST BATON ROUGE
60	422,509	VALERO REFINING	ST. LANDRY
61	375,326	MURPHY OIL USA, INC.	ST. BERNARD
62	270,235	LAROCHE INDUSTRIES INC	ST. JAMES
63	255,500	SANDERSON FARMS, INC.	TANGIPAHOA
64	251,908	CONOCO LAKE CHARLES REFINERY	CALCASIEU
65	249,416	VULCAN MATERIALS COMPANY,	ASCENSION
66	242,828	FORMOSA PLASTICS CORPORATION	EAST BATON ROUGE
67	230,295	KOCH NITROGEN CO.	OUACHITA
68	220,329	BP OIL CO ALLIANCE REF	PLAQUEMINES
69	205,326	OCCIDENTAL CHEMICAL CORP.	ST. CHARLES
70	205,005	DSM COPOLYMER (FORM. COPOLYMER	EAST BATON ROUGE
71	190,400	CABOT CORP CANAL PLANT	ST. MARY
72	173,527	CYPRESS POLYPROPYLENE PLANT	ST. CHARLES
73	173,494	IMC AGRICO CHEMICAL COMPANY	ST. CHARLES
74	167,985	ENTERGY - ROY S. NELSON GENERA	CALCASIEU
75	166,559	CLECO CORPORATION - RODEMACHER	RAPIDES
76	165,286	AVONDALE SHIPYARDS	JEFFERSON
77	159,201	COSMAR COMPANY	IBERVILLE
78	152,000	CABOT CORP VILLE PLATTE PLANT	EVANGELINE
79	147,238	ARCO CHEM	CALCASIEU
80	145,661	WESTLAKE POLYMERS CORPORATION	CALCASIEU
81	140,182	ASHLAND CHEM	IBERVILLE
82	135,840	W.R. GRACE & CO.- CONN.	CALCASIEU
83	129,740	ALLIEDSIGNAL INC	ASCENSION
84	128,605	LOCKHEED MARTIN	ORLEANS
85	113,514	TAYLORTEC, INC.	TANGIPAHOA
86	109,620	EQUISTAR CHEMICALS, LP	CALCASIEU
87	104,033	ORION REFINING CORPORATION	ST. CHARLES
88	102,910	SIGMA COATINGS USA B.V.	JEFFERSON
89	91,817	MARATHON OIL COMPANY	ST. JOHN THE BAPTIST
90	91,783	EXIDE CORPORATION -BR SMELTER	EAST BATON ROUGE
91	89,051	CHEVRON CHEMICAL COMPANY	ST. JAMES
92	85,252	UNIVERSAL FABRICATOR LLC	IBERIA
93	83,369	GULF WIRE CORPORATION	ORLEANS
94	82,497	INTERNATIONAL PAPER-SPRINGHILL	WEBSTER
95	79,084	AIR PRODUCTS	ORLEANS
96	79,000	DEGUSSA CORPORATION IVANHOE	ST. MARY
97	77,520	OIL BARGES INC OBI	IBERIA
98	77,197	WILLAMETTE IND. SUREPINE DIV.	LINCOLN
99	76,366	AIR PRODUCTS CHEM	IBERVILLE
100	71,745	VIVIAN INDUSTRIES VIP INC.	CADDO
101	69,260	ALLOY PIPING PROD	CADDO
102	67,000	SUPERIOR TIE AND TIMBER	CADDO
103	64,385	WILLAMETTE IND. LILLIE	UNION

## 1998 TRI Top 375 Facilities Ranked By Total Releases

105	57,727	OLIN CORPORATION	CALCASIEU
106	54,556	RHODIA	EAST BATON ROUGE
107	54,299	WESTLAKE PETROCHEMICALS	CALCASIEU
108	49,700	BOC GASES	ORLEANS
109	47,700	KAISER ALUMINUM AND CHEMICAL	ST. JAMES
110	43,100	HARVEY COATING PLANT	JEFFERSON
111	42,891	SOLUTIA INC.	ST. CHARLES
112	41,774	DELTECH CORPORATION	EAST BATON ROUGE
113	38,303	EXXON CHEMICAL AMERICAS BR	EAST BATON ROUGE
114	36,803	CALCASIEU REFINING COMPANY	CALCASIEU
115	34,833	TEMPLE SOUTHWEST LOUISIANA	BEAUREGARD
116	34,700	AMELIA COATING PLANT	ASSUMPTION
117	34,264	RIVERWOOD INT. USA - PLANT 70	OUACHITA
118	34,094	ICO, INC.	ASSUMPTION
119	33,993	WESTVACO CORPORATION	BEAUREGARD
120	33,643	DU PONT BURNSIDE PLANT	ASCENSION
121	32,705	NALCO CHEMICAL COMPANY	ST. JOHN THE BAPTIST
122	30,064	EVANS HARVEY INC. ( EVANS CONT)	JEFFERSON
123	29,651	MONTELL (FORMERLY HIMONT)	CALCASIEU
124	29,109	G. E. COMMERCIAL TRANSFORMER	CADDO
125	28,621	BORDEN CHEM & PLASTICS OPER	WEST BATON ROUGE
126	27,494	PLACID REFINING COMPANY	WEST BATON ROUGE
127	27,465	DIXIE PRODUCE AND PACKAGING	JEFFERSON
128	27,360	BOLLINGER SHIPYARD AMELIA	ST. MARY
129	27,000	EDO SPECIALTY PLASTICS	EAST BATON ROUGE
130	26,800	CP LOUISIANA, INC.	JEFFERSON
131	26,644	CONAGRA BROILER COMPANY	UNION
132	26,100	CALUMET LUBRICANTS CO.	BOSSIER
133	25,243	WILLAMETTE INDUSTRIES INC.	WINN
134	23,820	MARINE CLEANING, L.L.C.	CALCASIEU
135	23,234	BIOLAB INC	CALCASIEU
136	23,181	WILLIAMETTE INDUSTRIES/ ARCADI	LINCOLN
137	22,225	BOLLINGER SHIPYARDS, INC. LOCK	LAFOURCHE
138	20,844	AMITE FOUNDRY & MACHINE, INC.	TANGIPAHOA
139	20,660	SPECTRUM CONTROL TECH., INC.	ORLEANS
140	20,566	CARBOLINE COMPANY	CALCASIEU
141	19,801	FRYMASTER CORPORATION	CADDO
142	19,800	OMEGA PROTEIN, INC.	VERMILION
143	19,250	ICI AMERICAS	IBERVILLE
144	18,300	COLUMBIAN CHEMICALS COMPANY	ST. MARY
145	17,215	BAKER MFG	RAPIDES
146	16,718	GRANT CHEMICAL-DIV. OF FERRO	EAST BATON ROUGE
147	16,616	EVANS HARVEY CORP. (EVANS COOP	JEFFERSON
148	16,603	C OCCIDENTAL CHEM CORP.	ST. JAMES
149	15,810	ZENECA INC. (FORMERLY ICI AM-	IBERVILLE
150	15,455	BIOPRODUCTS OF LOUISIANA, LLC	IBERVILLE
151	14,609	GREIF BROTHERS CORPORATION	IBERVILLE
152	14,323	AMAX METALS RECOVERY, INC.	PLAQUEMINES
153	13,303	GRETNA MACHINE & IRON WORKS	JEFFERSON
154	13,295	PRIDE AVIATION	IBERIA
155	12,422	WESTLAKE STYRENE CORPORATION	CALCASIEU
156	11,915	BAYOU STEEL CORP	ST. JOHN THE BAPTIST

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157	11,767	DURAWOOD TREATING COMPANY	RAPIDES
158	11,717	TRINITY - MADISONVILLE	ST. TAMMANY
159	11,643	EXXON CHEMICAL AMERICAS-RESIN	EAST BATON ROUGE
160	11,550	SCAPA ROLLS	WEBSTER
161	11,403	GROW AUTOMOTIVE	EAST BATON ROUGE
162	10,981	AMERCHOL CORP	ST. HELENA
163	10,619	CALUMET LUBRICANTS	WEBSTER
164	10,059	NORTHROP GRUMMAN CORPORATION	CALCASIEU
165	10,000	STEEL FABRICATORS OF MONROE	OUACHITA
166	9,980	BOLLINGER SHIPYARDS, INC. LARO	LAFOURCHE
167	8,894	JEFFERSON FIBERGLASS, CO., INC	JEFFERSON
168	8,155	KOPPERS INDUSTRIES, INC	DE SOTO
169	8,118	TEJAS GAS PROCESSING LLC NORCO	ST. CHARLES
170	8,114	RESIN SYSTEMS, INC.	CALCASIEU
171	7,873	WESTLAKE POLYMERS CORPORATION	CALCASIEU
172	7,738	GUIDE LOUISIANA, LLC	OUACHITA
173	7,600	DELTA ENVIRONMENTAL PRODUCTS	LIVINGSTON
174	7,529	NESTE RESINS CORP.	WINN
175	7,392	ALBEMARLE CORPORATION PROCESS	EAST BATON ROUGE
176	7,200	ALAC PLAQUEMINE ASU	IBERVILLE
177	6,448	ASHLAND DISTRIBUTION CO	EAST BATON ROUGE
178	6,217	UNITED STATES MARINE, INC.	ORLEANS
179	5,684	CHEMCENTRAL/NEW ORLEANS	JEFFERSON
180	5,500	STOCKHAUSEN LOUISIANA, LTD	ST. JOHN THE BAPTIST
181	5,407	WILSONART INT'L	LIVINGSTON
182	5,182	TRIDENT CHEMICAL COMPANY	WEST BATON ROUGE
183	5,121	GULF COAST CHEMICAL, INC.	VERMILION
184	4,684	ST JAMES TERMINAL	ST. JAMES
185	4,570	X-CHEM, INC.	JEFFERSON
186	4,231	STARLING, INC	LIVINGSTON
187	4,000	OLIN CORPORATION	CADDO
188	3,910	SHELL CHEMICAL - RESERVE	ST. JOHN THE BAPTIST
189	3,609	SHELL OIL CO.-ST.ROSE SITE	ST. CHARLES
190	3,380	MICRO CHEMICAL COMPANY	FRANKLIN
191	3,365	LOCKPORT THERMOSETS, INC.	LAFOURCHE
-192	3,258	TETRA CHEMICALS, INC.	CALCASIEU
193	3,250	CERTAINTED CORPORATION	CALCASIEU
194	3,149	MOTIVA ENTERPRISES LLC KENNER	JEFFERSON
195	3,130	NICOLAUS PAPER INC.	LAFOURCHE
196	3,030	BAKER PETROLITE - RAYNE	ACADIA
197	2,882	PIONEER AMERICAS, INC.	IBERVILLE
198	2,882	STAUFFER CHLOR ALKALI COMPANY	IBERVILLE
199	2,856	THE MARBLE QUARRY, INC.	ST. TAMMANY
200	2,799	WITCO CORPORATION	JEFFERSON
201	2,722	VAN WATERS AND ROGERS INC	ASCENSION
202	2,662	FMC CORPORATION	ST. LANDRY
203	2,611	GNB,INC AUTOMOTIVE BATTERY DIV	CADDO
204	2,588	COASTAL CHEMICAL CO LLC	VERMILION
205	2,470	SUNLAND FABRICATORS, INC.	LIVINGSTON
206	2,394	THE DOW CHEMICAL COMPANY	ASSUMPTION
207	2,275	CHEMLINK CO.	ST. TAMMANY
208	2,275	PEARL RIVER POLYMERS	ST. TAMMANY

## 1998 TRI Top 375 Facilities Ranked By Total Releases

209	2,259	PELLERIN MILNOR CORPORATION	JEFFERSON
210	1,961	LAKE CHARLES CARBON COMPANY	CALCASIEU
211	1,944	VAN WATERS AND ROGERS INC	LAFAYETTE
212	1,840	PRAXAIR DISTRIBUTION INC	ST. CHARLES
213	1,665	ECLECTIC PRODUCTS INC.	RAPIDES
214	1,559	MARATHON OIL COMPANY -TERMINAL	ST. JOHN THE BAPTIST
215	1,500	COMPLEX CHEMICALS CO., INC.	MADISON
216	1,250	QPL INC	LAFOURCHE
217	1,237	NALCO/EXXON ENERGY CHEMICAL	LAFAYETTE
218	1,147	SAFETY KLEEN INC	EAST BATON ROUGE
219	1,055	HAYWILK GALVANIZING, INC.	JEFFERSON
220	1,053	DELTA DISTRIBUTORS, INC.	CADDO
221	930	CLINE BUCKNER, INC.	TANGIPAHOA
222	930	WATERBURY COMPANIES, INC.	TANGIPAHOA
223	841	B OCCIDENTAL CHEM CORP	ST. CHARLES
224	831	PECAN GROVE MARINE TERMINAL	CALCASIEU
225	691	AIR PRODUCTS & CHEMICALS, INC.	ASCENSION
226	683	HOBSON GALVANIZING - DIVISION	PLAQUEMINES
227	613	TRUS JOIST MACMILLAN	NATCHITOCHE
228	586	DPC ENTERPRISES	ST. JOHN THE BAPTIST
229	563	HAYNES INTERNATIONAL, INC.	BIENVILLE
230	514	SHELL CHEMICAL CO. - TAFT PLAN	ST. CHARLES
231	511	EXXON PORT ALLEN LUBRICANTS	WEST BATON ROUGE
232	505	LONE STAR INDUSTRIES	ORLEANS
233	482	CXY CHEMICALS, USA	ST. CHARLES
234	480	AZ CHEM	ALLEN
235	255	STEEL FORGINGS INC.	CADDO
236	250	ESGARD, INC. - DEBONNAIRE RD.	LAFAYETTE
237	250	ECOLOGICAL TANKS INC.	UNION
238	250	EQUILON ENTERPRISES LLC	JEFFERSON
239	229	MORTON INTERNATIONAL INC.,	IBERIA
240	217	CYPRESS CATALYST PLANT	ST. CHARLES
241	210	HARCOS CHEMICALS INC	IBERVILLE
242	150	PROCTER & GAMBLE MANU. CO.	RAPIDES
243	127	US DOD US ARMY JRTC	VERNON
244	113	ALAC NORCO ASU	ST. CHARLES
245	61	PRAXAIR/LIQUID CARBONIC	ASCENSION
246	61	OHMSTEDE, INC.	CALCASIEU
247	52	STUPP CORPORATION	EAST BATON ROUGE
248	51	DIS-TRAN PRODUCTS INC.	RAPIDES
249	50	BERCEN INC	LIVINGSTON
250	15	TIFTON ALUMINUM COMPANY	RICHLAND
251	11	DELTA PETROLEUM CO. INC.(ST. R	ST. CHARLES
252	8	GAYLORD CHEMICAL CORPORATION	WASHINGTON
253	5	CERRO COPPER TUBE	BOSSIER
254	5	BAYOU COATING L L C	EAST BATON ROUGE
255	5	BAYOU PIPE COATINGS	IBERIA
256	5	CIBA SPECIALTY CHEMICALS CORPO	IBERVILLE
257	5	HALLIBURTON ENERGY SERVICES	IBERIA
258	5	BOISE CASCADE ALEXANDRIA	RAPIDES
259	5	PENNZOIL PRODUCTS COMPANY	CADDO
260	5	RHONE-POULENC CHEMICAL CO.	ASCENSION



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261	3	AMPACET CORP	BEAUREGARD
262	2	SAFETY KLEEN SYSTEMS	RAPIDES
263	1	LUCENT TECH.DENPORT SOUTH	CADDO
264	0	ACME TUBE	DE SOTO
265	0	ARNOLD FOREST PROD	CADDO
266	0	BATON ROUGE COCA COLA	EAST BATON ROUGE
267	0	THE GEON COMPANY (BF GOODRICH)	IBERVILLE
268	0	CAMERON	EVANGELINE
269	0	CALLAWAY CHEMICAL CO.	CADDO
270	0	PURINA MILLS, INC.	TANGIPAHOA
271	0	PURINA MILLS, INC.	CADDO
272	0	PLYMOUTH TUBE COMPANY	OUACHITA
273	0	LOUISIANA COCA-COLA BOTTLING 2	ORLEANS
274	0	LOUISIANA COCA-COLA BOTTLING 1	ORLEANS
275	0	LOU ANA FOODS, INC.	ST. LANDRY
276	0	KIK-LOUISIANA, INC.	ST. TAMMANY
277	0	L.L. BREWTON LBR. CO. INC.	WINN
278	0	INLAND PAPERBOARD AND PACKAGIN	WEBSTER
279	0	HUGHES CHRISTENSEN LAFAYETTE	LAFAYETTE
280	0	HI-PORT, INC.	EAST BATON ROUGE
281	0	THE TRANE COMPANY	WEBSTER
282	0	GULF COAST LUBES PLANT	CALCASIEU
283	0	CRYSTAL CLEAN SERVICES LLC	CADDO
284	0	FLINT INK NORTH AMERICA CORP.	OUACHITA
285	0	OUACHITA COCA-COLA	OUACHITA
286	0	OIL CENTER RESEARCH, INC.	LAFAYETTE
287	0	NEW ORLEANS SHIPYARD	JEFFERSON
288	0	NAN YA PLASTICS CORPORATION	POINTE COUPEE
289	0	MID-STATES WOOD PRESERVERS	LINCOLN
290	0	HENDRIX MANUFACTURING CO., INC	DE SOTO
291	0	HARRY L. LAWS & CO., INC.	WEST BATON ROUGE
292	0	RUST SPECIALTY CHEMICALS	ASCENSION
293	0	ELDER WOOD PRESERVING INC.	AVOYELLES
294	0	TATE & LYLE NORTH AMERICAN	ST. BERNARD
295	0	DISCOVERY CHEMICALS, INC.	WEST BATON ROUGE
296	0	DELTA PETROLEUM COMPANY, INC.	JEFFERSON
297	0	DAYBROOK FISHERIES, INC.	PLAQUEMINES
298	0	LOUISIANA COCA-COLA BOTTLING	JEFFERSON
299	0	OHMSTEDE INC	IBERVILLE
300	0	MCKINNEY OIL COMPANY	MADISON
301	0	MARTCO PARTNERSHIP	NATCHITOCHES
302	0	KENCOIL INC.	PLAQUEMINES
303	0	CBI SERVICES, INC.	LIVINGSTON
304	0	BREDERO PRICE HARVEY PLANT	JEFFERSON
305	0	CAPITOL STEEL	ST. TAMMANY
306	0	CAPITOL STEEL, INC.	EAST BATON ROUGE
307	0	DELTA BEVERAGE GROUP, INC.	ST. JOHN THE BAPTIST
308	0	WECHEM INC.	JEFFERSON
309	0	SKYLINE HOMES	BOSSIER
310	0	SPECIALTY ENVIRONMENTAL	CADDO
311	0	WEATHERFORD GEMOCO	TERREBONNE
312	0	SILCO DBA ELCO FOREST PRODUCTS	ST. LANDRY



## 1998 TRI Top 375 Facilities Ranked By Total Releases

313	0	DATAChem, INC.	ST. JOHN THE BAPTIST
314	0	CONAGRA BROILER COMPANY	NATCHITOCHES
315	0	CONAGRA BROILER CO.,	BIENVILLE
316	0	CONAGRA BROILER CO.	SABINE
317	0	COLONIAL SUGARS INC.	ST. JAMES
318	0	MARIAH CORPORATION, INC.	LAFAYETTE
319	0	CELOTEX CORPORATION	JEFFERSON
320	0	CASTROL NORTH AMERICA, INC.	WEST BATON ROUGE
321	0	CAPITOL MANUFACTURING CO.	ACADIA
322	0	BETZDEARBORN RESERVE	ST. JOHN THE BAPTIST
323	0	BENTON CREOSOTING WORKS	BOSSIER
324	0	BAKER OIL TOOLS	LAFAYETTE
325	0	ATLAS STEEL	JEFFERSON
326	0	ANSELL EDMONT INDUSTRIAL, INC.	CLAIBORNE
327	0	SCHERING- PLOUGH VETERINARY	EAST BATON ROUGE



## Sources of Associated Information

The data contained in this report, and additional information to assist in interpreting its contents, are available to the public in a variety of places:

1. TRI Data can be assessed through LDEQ's Web Page on the Internet. You can find it listed under the Office of the Secretary. The address is:

<http://www.deq.state.la.us/evaluation/TRI/index.htm>

2. The Form R's submitted by individual facilities within the state of Louisiana are on file at the Office of Environmental Assessment, Evaluation Division of the Louisiana Department of Environmental Quality. Chemical information and inquiries should be directed to this section in writing or by calling:

Attn: Mrs. Linda Brown  
P.O. Box 82178  
7290 Bluebonnet Road  
Baton Rouge, LA. 70884-2178  
(225) 765-2993

3. Your Local Emergency Planning Committee (LEPC) should have information about the types of chemicals located on-site at facilities in your area. Another source of this type of information is your local Fire Department or your local Emergency Preparedness Office. Their phone numbers can be found in your local phone book or by calling your local library.
4. The Office of State Police in Baton Rouge also has information concerning the types of chemicals that facilities have on-site. Their telephone number is:

(225) 925-6113

<http://www.dps.state.la.us/lsp/tess.html>

5. The National Library of Medicine (NLM)'s Toxicology Data Network, commonly referred to as TOXNET, is a computerized collection of toxicology oriented databases. It also contains all of the Toxic Release Inventory information on every facility in the nation that has filed Form R's. The system allows access to valuable data on hazardous chemicals, as well as the Toxic Release Inventory information. Many universities have the ability to search the NLM system. Check with those in your area.

<http://sis.nlm.nih.gov/sis1/>

6. Web Page for Agency for Toxic Substances and Disease Registry:

<http://atsdr.cdc.gov/atsdrhome.html>

7. The Louisiana Office of Public Health's Environmental Epidemiology and Toxicology Section can provide you with facts on toxicological, health, and environmental effects, as well as information from the NLM system. Their office in New Orleans may be reached by calling:

(504) 568-8537

Or

1(888) 293-7020.

Your local Public Health Unit and your family physician are additional places where questions can be answered.

8. If you are interested in purchasing copies of the national data or that of an individual state you may call the EPA's toll-free Emergency Planning and Community Right-To-Know Hotline. The hotline personnel are also available to answer any other questions you may have concerning the Emergency Planning and Community Right-To-Know Act. Their phone number is:

(800) 424-9346.

<http://www.epa.gov/epaoswer/hotline/index.htm>

- Other EPCRA locations are:

EPA's TRI: <http://www.epa.gov/tri>

- EPA Regional Section 313 Coordinators and state designated TRI contracts:

<http://www.epa.gov/tri/contracts.htm>

- Access to EPSA's TRI data:

<http://www.epa.gov/ceisweb1/triexplorer/>

- Toxic Releases Emissions Ranking Query Form:

<http://www.epa.gov/envirofw/html/tris/reports/msnrnkqry.html>

- State Emergency Response Commission (SERC) & Local Emergency planning Committee (LEPC) contacts maintained by Right-To-Know Network:

<http://www.rtk.net/trisearch.html>

9. Another Source of information on toxicological, health and environmental effects is your local library where numerous books, journals and references are available.

Library of Congress: <http://www.lcweb.loc.gov/>

Louisiana State Library: <http://www.smt.state.lib.la.us/>

10. Call the individual company.

## *Louisiana Toxics Release Inventory Report - 1998*

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11. Chemical Manufacturers Association (CMA):

(800) 624-4321

Or

CHEMTRAC (800) 262-8200.

<http://www.cmahq.com>

12. Louisiana Chemical Association (LCA):

(225) 344-2609.

13. Mid-Continent Oil and Gas:

(225) 387-3205.

<http://www.neis.com/>

14. Center for Energy and Environmental Studies, Southern University:

(225) 771-4724.

<http://www.subr.edu/CEES/>

15. Institute for Environmental Science and Louisiana Energy and Environmental Resource and Information Center (LEERIC), Louisiana State University:

(225) 388-8521.

<http://www.ec26.enrg.lsu.edu/index3.htm>

16. Louisiana Environmental Action Network:

(225) 928-1315.

### **Other Outside Environmental Links:**

17. EPA:

<http://www.epa.gov/epahome/>

18. Louisiana Institute of Toxicology, Trihara M. Mehendale, Ph.D., DABT, FATS Director College of Pharmacy and Health Sciences, Northeast Louisiana University:

<http://198.79.220.3/pharmacy/mehendale/lithmpg.htm>

19. LMRICS: Problems and Background:

<http://mapper.cadgis.lsu.edu/limrics/problem.htm>

20. Information on EPA:

<http://134.167.74.198/oepa/guidance/cercla/rqs-gen.htm>

21. Fact Sheet: Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA), August 1994.

<http://www.es.inel.gov/techinfo/facts/pro-act6.htm>

22. Louisiana Department of Agriculture and Forestry:

<http://www.ldaf.state.la.us/>

23. The Chemical Industry Homepage:

<http://www.neis.com/>

24. Chemical Professional Associations:

<http://www.neis.com/associations.html>

25. Chemical Companies on the Web:

[http://www.neis.com/chemical\\_companies.html](http://www.neis.com/chemical_companies.html)

### **Educational Resources:**

26. DEQ Educational Resources for Students and Teachers

<http://www.deq.state.la.us/educate/educate.htm>

# Louisiana Toxics Release Inventory Report - 1998

## TRI Chemicals in Louisiana - Releases

SUBSTANCE	CAS#	RANK	FAC	AIR	WATER	LAND	INJECTION	TOTAL RELEASES	(OFF SITE) DISPOSAL	TOTAL ON&OFF- SITE RELEASES
1,1,1,2-TETRACHLOROETHANE	630-20-6	155	4	2,805	1	0	0	2,806	163,586	166,392
1,1,1-TRICHLOROETHANE	71-55-6	67	9	155,698	260	0	0	155,958	29,440	185,398
1,1,2,2-TETRACHLOROETHANE	79-34-5	147	6	3,525	1	0	0	3,526	207,959	211,485
1,1,2,2-TETRACHLORO-1-FLUOR	354-14-3	215	1	10	0	0	0	10	26,387	26,397
1,1,2-TRICHLOROETHANE	79-00-5	124	8	15,757	528	1	0	16,286	6,447,680	6,463,966
1,1-DICHLORO-1-FLUOROETHANE	1717-00-6	58	3	215,660	5	0	0	215,665	201,121	416,786
1,1-DIMETHYL HYDRAZINE	57-14-7	183	2	468	0	0	0	468	913	1381
1,1-DICHLOROETHANE	75-34-3	116	5	22,345	0	0	0	22,345	24,401	46,746
1,2,3-TRICHLOROPROPANE	96-18-4	184	2	385	0	0	0	385	0	385
1,2,4-TRICHLOROBENZENE	120-82-1	202	1	76	0	0	0	76	11,156	11,232
1,2,4-TRIMETHYLBENZENE	95-63-6	54	35	267,840	69	3,540	882	272,331	98,919	371,250
1,2-BUTYLENE OXIDE	106-88-7	146	2	3,863	0	0	0	3,863	290	4,153
1,2-DIBROMOETHANE	106-93-4	144	1	4,073	6	0	0	4,079	0	4,079
1,2-DICHLORO-1,1,2-TRIFLUOR	354-23-4	78	1	101,118	5	0	0	101,123	0	101,123
1,2-DICHLORO-1,1-DIFLUOROET	1649-08-7	214	1	10	0	0	0	10	13,573	13,583
1,2-DICHLOROBENZENE	95-50-1	139	2	1,900	11	0	3,800	5,711	6,138	11,849
1,2-DICHLOROETHANE	107-06-2	50	19	247,519	1,777	1	56,937	306,234	9,372,460	9,678,694
1,2-DICHLOROETHYLENE	540-59-0	148	2	3,391	44	0	0	3,435	2,583	6,018
1,2-DICHLOROPROPANE	78-87-5	131	3	11,145	67	32	0	11,244	120	11,364
1,2-PHENYLENEDIAMINE	95-54-5	186	1	360	0	0	0	360	3,671	4,031
1,3-BUTADIENE	106-99-0	53	20	291,099	97	0	0	291,196	12,669,795	12,960,991
1,3-DICHLORO-1,1,2,2,3-PENT	507-55-1	103	1	35,000	0	0	0	35,000	0	35,000
1,3-DICHLOROPROPYLENE	542-75-6	150	2	3,098	61	1	0	3,160	220	3,380
1,4-DICHLORO-2-BUTENE	764-41-0	136	1	980	0	0	5,700	6,680	124,000	130,680
1,4-DIOXANE	123-91-1	114	5	7,676	15,774	0	0	23,450	17,949	41,399
1-CHLORO-1,1,2,2-TETRAFLUOR	354-25-6	204	1	72	0	0	0	72	0	72
1-CHLORO-1,1-DIFLUOROETHANE	75-68-3	77	2	104,793	5	0	0	104,798	81,510	186,308
2,2-DICHLORO-1,1,1-TRIFLUOR	306-83-2	117	3	21,981	5	0	0	21,986	4,501	26,487
2,3-DICHLOROPROPENE	78-88-6	189	1	286	0	0	0	286	0	286
2,4-D	94-75-7	105	1	0	0	0	29,909	29,909	0	29,909
2,4-DIAMINOTOLUENE	95-80-7	223	1	0	0	0	0	0	216,249	216,249
2,4-DIMETHYLPHENOL	105-67-9	212	1	21	0	0	0	21	0	21
2,4-DINITROPHENOL	51-28-5	230	2	0	0	0	0	0	0	0
2,6-XYLIDINE	87-62-7	185	2	360	0	0	0	360	0	360
2-CHLORO-1,1,1,2-TETRAFLUOR	2837-89-0	134	2	9,888	5	0	0	9,893	0	9,893
2-CHLORO-1,1,1-TRIFLUOROETH	75-88-7	133	1	10,125	0	0	0	10,125	0	10,125
2-ETHOXYETHANOL	110-80-5	250	1	0	0	0	0	0	0	0
2-MERCAPTOBENZOTHAZOLE	149-30-4	92	1	4,200	0	0	45,000	49,200	716,660	765,860
2-METHOXYETHANOL	109-86-4	143	4	3,194	1,368	0	0	4,562	77,562	82,124
2-METHYLLACTONITRILE	75-86-5	180	2	599	0	0	0	599	0	599
2-METHYLPYRIDINE	109-06-8	245	1	0	0	0	0	0	12	12
2-NITROPHENOL	88-75-5	201	2	45	35	0	0	80	0	80
2-NITROPROPANE	79-46-9	118	1	21,259	558	0	0	21,817	31,106	52,923
3,3-DICHLORO-1,1,1,2,2-PENT	422-56-0	107	1	28,700	0	0	0	28,700	0	28,700
4,4'-ISOPROPYLIDENEDIPHENOL	80-05-7	128	8	0	470	13,016	0	13,486	7,460	20,946
4,4'-METHYLENEDIANILINE	101-77-9	96	2	412	0	0	47,000	47,412	19,070	66,482
4,6-DINITRO-O-CRESOL	534-52-1	206	1	62	0	0	0	62	990	1052
4-AMINOAZOBENZENE	60-09-3	196	1	0	0	0	124	124	74	198
4-AMINOBIPHENYL	92-67-1	225	1	0	0	0	0	0	812	812
4-NITROPHENOL	100-02-7	182	1	475	0	0	0	475	2,000	2,475
ACETALDEHYDE	75-07-0	22	19	1,205,631	12,435	716	280,000	1,498,782	57,422	1,556,204
ACETAMIDE	60-35-5	79	1	0	0	0	99,000	99,000	0	99,000
ACETONITRILE	75-05-8	6	7	42,412	596	0	7,811,000	7,854,008	13,119	7,867,127
ACROLEIN	107-02-8	153	2	2,998	0	0	0	2,998	0	2,998

SUBSTANCE	CAS#	RANK	FAC	AIR	WATER	LAND	INJECTION	TOTAL	(OFF SITE)	TOTAL ON & OFF
								RELEASES	DISPOSAL	SITE RELEASES
ACRYLAMIDE	79-06-1	20	2	305	97	0	1,700,000	1,700,000	17,153	1,717,555
ACRYLIC ACID	79-10-7	12	9	12,258	6,345	610	3,500,000	3,519,213	451,340	3,970,553
ACRYLONITRILE	107-13-1	27	7	15,396	63	0	1,000,000	1,015,459	394	1,015,853
ALLYL ALCOHOL	107-18-6	65	7	1,056	1	0	160,000	161,057	1,700	162,757
ALLYL CHLORIDE	107-05-1	94	5	48,585	0	2	0	48,587	706,454	755,041
ALLYLAMINE	107-11-9	221	1	0	0	0	0	0	0	0
ALUMINUM (FUME OR DUST)	7429-90-5	83	3	59	0	65,000	0	65,059	2,326	67,385
AMETRYN	834-12-8	200	1	51	41	0	0	92	0	92
AMMONIA	7664-41-7	2	82	21,873,806	669,803	10,267	5,303,871	27,857,747	416,549	28,274,296
ANILINE	62-53-3	26	10	43,294	0	0	1,013,016	1,056,310	185,041	1,241,351
ANTHRACENE	120-12-7	145	7	3,900	94	0	0	3,994	1,701	5,695
ANTIMONY COMPOUNDS	N010	97	8	618	366	44,369	0	45,353	121,053	166,406
ARSENIC	7440-38-2	219	3	0	2	0	0	2	35,189	35,191
ARSENIC COMPOUNDS	N020	106	7	0	18	29,248	0	29,266	7	29,273
ASBESTOS (FRIABLE)	1332-21-4	32	11	19	0	736,000	0	736,019	234,946	970,965
ATRAZINE	1912-24-9	110	2	24,616	2,480	0	336	27,432	10,866	38,298
Acetophenone	98-86-2	208	1	56	0	0	0	56	83	139
BARIUM COMPOUNDS	N040	10	18	123,175	99,986	3,766,143	0	3,989,304	38,447	4,027,751
BENZENE	71-43-2	25	49	1,279,410	3,433	90	56,196	1,339,129	193,443	1,532,572
BENZOYL CHLORIDE	98-88-4	213	2	15	0	0	0	15	899	914
BENZYL CHLORIDE	100-44-7	205	3	64	0	0	0	64	150	214
BIPHENYL	92-52-4	135	6	7,929	0	20	0	7,949	1,127	9,076
BIS(2-CHLORO-1-METHYLETHYL)	108-60-1	165	1	2,220	2	2	0	2,224	0	2,224
BIS(2-CHLOROETHYL) ETHER	111-44-4	199	4	103	2	0	0	105	498,578	498,683
BIS(CHLOROMETHYL) ETHER	542-88-1	229	1	0	0	0	0	0	0	0
BORON TRIFLUORIDE	7/2/7637	240	2	0	0	0	0	0	0	0
BROMINE	7726-95-6	176	5	1,117	0	0	0	1,117	10	1,127
BROMOMETHANE	74-83-9	141	1	5,000	0	6	0	5,006	0	5,006
BUTYL ACRYLATE	141-32-2	138	4	5,694	37	0	0	5,731	672,570	678,301
BUTYRALDEHYDE	123-72-8	172	1	1,303	0	0	0	1,303	0	1,303
CADMIUM	7440-43-9	241	1	0	0	0	0	0	10,575	10,575
CADMIUM COMPOUNDS	N078	125	2	0	0	16,000	0	16,000	44	16,044
CARBOFURAN	1563-66-2	190	1	234	1	0	0	235	8,686	8,921
CARBON DISULFIDE	75-15-0	35	10	599,587	0	0	16,567	616,154	6,475	622,629
CARBON TETRACHLORIDE	56-23-5	101	10	36,997	2,453	0	0	39,450	22,613	62,063
CARBONYL SULFIDE	463-58-1	57	7	229,865	0	0	0	229,865	0	229,865
CATECHOL	120-80-9	142	10	1,179	3,654	83	0	4,916	6	4,922
CHLORDANE	57-74-9	122	1	0	0	0	20,106	20,106	0	20,106
CHLORINE	7782-50-5	38	80	470,724	42,095	0	0	512,819	672	513,491
CHLORINE DIOXIDE	10049-04-4	104	6	30,980	0	0	0	30,980	0	30,980
CHLOROACETIC ACID	79-11-8	198	1	114	0	0	0	114	0	114
CHLOROBENZENE	108-90-7	48	10	141,737	20	0	180,000	321,757	4,562,556	4,884,313
CHLORODOFLUOROMETHANE	75-45-6	21	9	1,617,456	3,652	0	0	1,621,108	34,531	1,655,639
CHLOROETHANE	75-00-3	112	12	23,659	1	50	0	23,710	73,158	96,868
CHLOROFORM	67-66-3	41	13	389,932	13,832	33	27	403,824	74,691	478,515
CHLOROMETHANE	74-87-3	45	11	301,115	63	50	68,921	370,149	1,107	371,256
CHLOROPRENE	126-99-8	40	2	403,504	0	0	100,000	503,504	57,000	560,504
CHLOROTHALONIL	1897-45-6	236	1	0	0	0	0	0	0	0
CHLOROTRIFLUOROMETHANE	75-72-9	126	1	14,700	5	0	0	14,705	0	14,705
CHROMIUM	7440-47-3	130	15	10,981	7	1,333	0	12,321	543,444	555,765
CHROMIUM COMPOUNDS	N090	69	23	2,583	1,984	146,467	0	151,034	826,718	977,752
COBALT	7440-48-4	187	2	6	0	350	0	356	9,547	9,903
COBALT COMPOUNDS	N096	86	14	213	7,637	40,625	11,000	59,475	169,843	229,318
COPPER	7440-50-8	149	13	11	1,823	4	1,500	3,338	105,754	109,092
COPPER COMPOUNDS	N100	44	29	5,019	12,164	367,224	307	384,714	3,715,731	4,100,445
CREOSOTE	8001-58-9	81	3	86,810	112	0	0	86,922	40,296	127,218
CRESOL (MIXED ISOMERS)	1319-77-3	99	7	43,301	577	0	0	43,878	69	43,947
CUMENE	98-82-8	82	11	83,010	47	0	0	83,057	392	83,449
CUMENE HYDROPEROXIDE	80-15-9	137	1	6,300	0	0	0	6,300	20	6,320

# Louisiana Toxics Release Inventory Report - 1998

SUBSTANCE	CAS#	RANK	FAC	AIR	WATER	LAND	INJECTION	TOTAL	(OFF SITE) TOTAL ON & OFF	
								RELEASES	DISPOSAL	SITE RELEASES
CYANIDE COMPOUNDS	N106	30	5	17,017	98	1,200	780,000	798,315	5,557	803,872
CYCLOATE	1134-23-2	195	1	65	0	0	77	142	0	142
CYCLOHEXANE	110-82-7	36	29	603,359	258	9	0	603,625	160,062	763,688
DECABROMODIPHENYL OXIDE	1163-19-5	49	49	0	0	310,000	0	310,000	0	310,000
DI(2-ETHYLHEXYL) PHTHALATE	117-81-7	217	217	4	0	0	0	4	6,633	6,637
DIAMINOTOLUENE (MIXED ISOME	25376-45-8	109	3	9,224	5,231	0	13,000	27,455	370,130	397,585
DIAZINON	333-41-5	232	1	0	0	0	0	0	0	0
DIBENZOFURAN	132-64-9	193	2	168	0	0	0	168	0	168
DIBUTYL PHTHALATE	84-74-2	237	2	0	0	0	0	0	30,623	30,623
DICHLOROBENZENE (MIXED ISOM	25321-22-6	191	2	229	0	0	0	229	6,708	6,937
DICHLOROBROMOMETHANE	75-27-4	156	1	2,370	0	90	0	2,460	0	2,460
DICHLORODIFLUOROMETHANE (CF	75-71-8	70	8	148,860	5	0	0	148,865	89,500	238,365
DICHLOROMETHANE	75-09-2	90	11	41,136	1,020	0	9,954	52,110	10,916	63,026
DICHLOROTETRAFLUOROETHANE	(76-14-2	98	2	44,644	5	0	0	44,649	33,458	78,107
DICHLOROTRIFLUOROETHANE	34077-87-7	166	1	1,699	0	0	0	1,699	0	1,699
DICYCLOPENTADIENE	77-73-6	80	8	88,266	10,095	0	0	98,361	16,637	114,998
DIETHANOLAMINE	111-42-2	71	15	109,475	6,954	0	24,000	140,429	128,063	268,492
DIISOCYANATES	N120	28	15	539	0	900,000	0	900,539	77,219	977,758
DIMETHYL PHTHALATE	131-11-3	248	2	0	0	0	0	0	0	0
DIMETHYLAMINE	124-40-3	140	6	5,640	10	0	0	5,650	3,318	8,968
DINITROBUTYL PHENOL	88-85-7	178	2	840	0	0	0	840	0	840
DINITROTOLUENE (MIXED ISOME	25321-14-6	93	5	12,643	1	0	36,000	48,644	54,343	102,987
DIPHENYLAMINE	122-39-4	119	5	11,846	0	0	9,665	21,511	708,356	729,867
EPICHLOROHYDRIN	106-89-8	89	7	52,273	10	2,031	0	54,314	72,607	126,921
ETHYL ACRYLATE	140-88-5	132	2	10,862	12	0	0	10,874	279,535	290,409
ETHYL DIPROPYLTHIOCARBAMATE	759-94-4	158	1	356	0	0	2,088	2,444	0	2,444
ETHYLBENZENE	100-41-4	47	51	325,438	632	78	0	326,148	210,517	536,665
ETHYLENE	74-85-1	9	51	4,318,452	0	0	0	4,318,452	770,055	5,088,507
ETHYLENE GLYCOL	107-21-1	29	37	337,619	254,511	39,559	242,799	874,488	159,064	1,033,552
ETHYLENE OXIDE	75-21-8	75	9	123,654	98	0	0	123,752	82,281	124,174
FENBUTATIN OXIDE	13356-08-6	170	1	664	0	0	660	1,324	40,327	1,324
FENOXYCARB	72490-01-8	243	1	0	0	0	0	0	17,985	1
FLUOMETURON	2164-17-2	235	1	0	0	0	0	0	129,533	0
FLUORINE	7782-41-4	168	1	1,500	0	0	0	1,500	162,534	1,500
FORMALDEHYDE	50-00-0	5	38	457,842	14,763	431	9,310,353	9,783,389	7,024	9,871,670
FORMIC ACID	64-18-6	18	14	11,901	2,073	0	2,370,638	2,384,612	49,990	2,424,939
FREON 113	76-13-1	62	2	180,626	1,607	0	0	182,233	168	200,218
GLYCOL ETHERS	N230	64	33	159,977	9,647	7	1,200	170,831	0	300,364
HEXACHLORO-1,3-BUTADIENE	87-68-3	161	4	2,392	5	0	0	2,397	5,457	164,931
HEXACHLOROBENZENE	118-74-1	188	4	339	0	0	0	339	0	7,363
HEXACHLOROETHANE	67-72-1	174	4	1,153	0	0	0	1,153	4,877	51,143
HYDRAZINE	302-01-2	154	5	2,871	0	0	0	2,871	36,284	3,039
HYDRAZINE SULFATE	10034-93-2	59	1	0	0	0	200,000	200,000	0	200,000
HYDROCHLORIC ACID	7647-01-0	11	57	3,973,495	2,300	1,500	0	3,977,295	0	3,982,752
HYDROGEN CYANIDE	74-90-8	100	4	42,637	91	0	0	42,728	421,111	42,728
HYDROGEN FLUORIDE	7664-39-3	33	19	716,963	255	1,605	0	718,823	7,035,862	723,700
HYDROQUINONE	123-31-9	73	4	1,177	681	0	125,309	127,167	0	163,451
ISOBUTYRALDEHYDE	78-84-2	207	1	58	0	0	0	58	123,707	58
ISOPROPYL ALCOHOL	67-63-0	151	2	3,131	0	0	0	3,131	1,141,828	3,131
LEAD	7439-92-1	171	3	1,320	0	0	0	1,320	1,593	422,431
LEAD COMPOUNDS	N420	46	8	6,433	859	345,533	0	352,825	6,640	7,388,687
M-XYLENE	108-38-3	95	6	46,275	0	780	972	48,027	0	48,027
MALEIC ANHYDRIDE	108-31-6	61	10	43,622	0	150,000	0	193,622	671,667	317,329
MANGANESE	7439-96-5	13	19	9,314	529	3,245,347	0	3,255,190	1,268	4,397,018
MANGANESE COMPOUNDS	N450	15	18	65,520	365,732	2,266,053	0	2,697,305	969,438	2,698,898
MERCURY	7439-97-6	157	2	2,410	42	0	0	2,452	127,988	9,092
MERCURY COMPOUNDS	N458	222	1	0	0	0	0	0	0	0
METHANOL	67-56-1	3	89	17,378,918	336,037	297,023	4,699,095	22,711,073	34,408	23,382,740
METHYL ACRYLATE	96-33-3	88	4	3,317	370	0	53,244	56,931	386	58,199,306,463



SUBSTANCE	CAS#	RANK	FAC	AIR	WATER	LAND	INJECTION	TOTAL	(OFF SITE)	TOTAL ON & OFF
								RELEASES	DISPOSAL	SITE RELEASES
METHYL ETHYL KETONE	78-93-3	23	38	1,406,827	8,693	1,155	16,772	1,433,447	969,438	2,402,885
METHYL ISOBUTYL KETONE	108-10-1	55	15	172,514	30	0	73,000	245,544	127,988	373,532
METHYL ISOTHIOCYANATE	556-61-6	228	1	0	0	0	0	0	0	0
METHYL METHACRYLATE	80-62-6	66	3	10,089	330	0	150,000	160,419	34,408	194,827
METHYL TERT-BUTYL ETHER	1634-04-4	51	16	305,027	1,046	4	0	306,077	386	306,463
MOLYBDENUM TRIOXIDE	1313-27-5	63	15	9,038	2,368	2,133	160,000	173,539	659,983	833,522
MONOCHLOROPENTAFLUOROETHANE	76-15-3	127	1	13,522	5	0	0	13,527	36,230	49,757
Methacrylonitrile	126-98-7	246	1	0	0	0	0	0	0	0
N,N-Dimethylformamide	68-12-2	76	4	14,599	330	0	103,857	118,786	1,712	120,498
n-Hexane	71-36-3	31	23	335,556	911	0	403,880	740,347	92,318	832,665
N-BUTYL ALCOHOL	872-50-4	68	8	112,435	40,591	0	670	153,696	376,727	530,423
N-Methyl-2-pyrrolidone	86-30-6	216	2	10	0	0	0	10	340,000	340,010
N-NITROSODIPHENYLAMINE	91-20-3	56	38	221,448	198	11,906	0	233,552	302,430	535,982
NAPHTHALENE	7440-02-0	129	13	10,091	1,080	1,479	0	12,650	291,402	304,052
NICKEL	N495	42	35	8,611	11,244	372,537	9,110	401,502	536,228	937,730
NICKEL COMPOUNDS	N511	4	37	0	7,627,993	42,750	5,119,236	12,789,979	353,150	13,143,129
NITRATE COMPOUNDS	7697-37-2	7	17	31,872	5	3,200	6,587,105	6,622,182	349	6,622,531
NITRIC ACID	139-13-9	160	2	0	21	0	2,400	2,421	0	2,421
NITRILOTRIACETIC ACID	98-95-3	52	5	40,798	0	0	255,529	296,327	271,111	567,438
NITROBENZENE	27314-13-2	233	1	0	0	0	0	0	0	0
NORFLURAZON	95-48-7	224	1	0	0	0	0	0	0	0
O-CRESOL	95-53-4	123	3	444	0	0	17,000	17,444	44,049	61,493
O-TOLUIDINE	95-47-6	120	5	21,424	0	0	0	21,424	10,849	32,273
O-XYLENE	10028-15-6	203	3	74	0	0	0	74	0	0
OZONE	106-44-5	152	3	714	0	0	2,400	3,114	11,098	14,212
P-CRESOL	156-10-5	244	1	0	0	0	0	0	0	0
P-NITROSODIPHENYLAMINE	106-50-3	177	2	896	0	0	0	896	12,000	12,896
P-PHENYLENEDIAMINE	106-42-3	85	3	62,000	0	0	0	62,000	0	62,000
P-XYLENE	87-86-5	210	1	2	49	0	0	51	30	81
PENTACHLOROPHENOL	79-21-0	173	1	1,286	0	0	0	1,286	0	1,286
PERACETIC ACID	52645-53-1	159	2	2,426	1	0	0	2,427	16,538	18,965
PERMETHRIN	85-01-8	197	1	24	94	0	0	118	770	888
PHENANTHRENE	108-95-2	43	33	197,238	10,295	1,312	183,561	392,406	217,133	609,539
PHENOL	75-44-5	179	4	751	0	0	0	751	1,048	1,799
PHOSGENE	7664-38-2	1	58	20,950	27,502,098	437,669	13,476	28,974,193	157,433	29,131,626
PHOSPHORIC ACID	7723-14-0	209	1	52	0	0	0	52	0	52
PHOSPHORUS (YELLOW OR WHITE)	85-44-9	113	3	23,603	0	0	0	23,603	2,360,304	2,383,907
PTHALIC ANHYDRIDE	88-89-1	226	2	0	0	0	0	0	0	0
PICRIC ACID	51-03-6	231	2	0	0	0	0	0	0	0
PIPERONYL BUTOXIDE	N590	87	7	59,221	18	20	0	59,259	38,593	97,852
POLYCYCLIC AROMATIC COMPOUND	7287-19-6	242	1	0	0	0	0	0	0	0
PROMETRYN	2312-35-8	234	1	0	0	0	0	0	0	0
PROPARGITE	107-19-7	218	1	2	0	0	0	2	0	2
PROPARGYL ALCOHOL	60207-90-1	227	1	0	0	0	0	0	0	0
PROPICONAZOLE	123-38-6	175	2	1,130	0	0	0	1,130	7	1,137
PROPIONALDEHYDE	115-07-1	17	34	2,427,953	50	370	0	2,428,373	2,600,034	5,028,407
PROPYLENE	75-56-9	102	6	37,402	4	180	0	37,586	17	37,603
PROPYLENE OXIDE	110-86-1	121	5	241	0	0	21,000	21,241	17	21,258
PYRIDINE	123-63-7	249	1	0	0	0	0	0	7	7
Paraldehyde	76-01-7	169	3	1,398	0	0	0	1,398	86,540	87,938
Pentachloroethane	91-22-5	192	2	190	0	0	0	190	0	190
QUINOLINE	82-68-8	238	1	0	0	0	0	0	0	0
QUINTOZENE	78-92-2	60	12	149,828	1,184	2	44,243	195,257	662,619	857,876
SEC-BUTYL ALCOHOL	7782-49-2	239	1	0	0	0	0	0	0	0
SELENIUM	N725	211	1	22	5	0	0	27	10,804	10,831
SELENIUM COMPOUNDS	7440-22-4	194	2	16	146	0	0	162	172,780	172,942
SILVER	N740	220	2	2	0	0	0	2	24,019	24,021
SILVER COMPOUNDS	122-34-9	163	1	2,309	82	0	0	2,391	3,747	6,138
SIMAZINE	128-04-1	247	1	0	0	0	0	0	0	0

## Louisiana Toxics Release Inventory Report - 1998

SUBSTANCE	CAS#	RANK	FAC	AIR	WATER	LAND	INJECTION	TOTAL	(OFF SITE)	TOTAL ON & OFF
								RELEASES	DISPOSAL	SITE RELEASES
SODIUM DIMETHYLDITHIOCARBAM	7632-00-2	34	7	51	1,002	0	697,801	698,854	227,686	926,540
SODIUM NITRITE	100-42	39	33	506,807	67	0	0	506,874	632,369	1,139,243
STYRENE	7664-93-9	16	38	2,680,143	3,837	9,190	0	2,693,170	160	2,693,330
SULFURIC ACID	75-65-01	164	5	1,237	997	0	0	2,234	593,463	595,697
TERT-BUTYL ALCOHOL	27-18-4	84	18	64,757	143	0	0	64,900	504,908	569,808
TETRACHLOROETHYLENE	7550-45-0	162	3	2,392	0	0	0	3,155,323	139,517	141,909
TITANIUM TETRACHLORIDE	108-88-3	14	95	2,854,563	951	298	299,511	510	2,010,203	5,165,526
TOLUENE	26471-62-5	181	5	510	0	0	0	1,631	2,170,848	2,171,358
TOLUENEDIISOCYANATE (MIXED	10061-02-6	167	1	1,630	0	1	0	133,150	0	1,631
TRANS-1,3-DICHLOROPROPENE	79-01-6	72	13	133,104	46	0	0	51,815	31,792	164,942
TRICHLOROETHYLENE	75-69-4	91	4	51,810	5	0	0	24,643	0	51,815
TRICHLOROFLUOROMETHANE (CFC	121-44-8	111	4	6,603	1,540	0	16,500	580,812	54,052	78,695
Triethylamine	108-05-4	37	6	579,749	1,063	0	0	126,581	97,175	677,987
VINYL ACETATE	75-01-4	74	10	126,580	1	0	0	27,823	915	127,496
VINYL CHLORIDE	75-35-4	108	4	27,823	0	0	0	1,406,322	1,300	29,123
VINYLDENE CHLORIDE	1330-20-7	24	79	1,404,430	568	552	772	23,151	697,802	2,104,124
XYLENE (MIXED ISOMERS)	7440-66-6	115	10	22,901	250	0	0	1,748,131	686,280	709,431
ZINC (FUME OR DUST)	N982	19	52	19,405	91,602	1,632,629	4,495	5,088,322	1,728,355	3,476,486
ZINC COMPOUNDS	110-54-3	8	40	5,060,327	4,010	758	23,227	2,392	1,967,443	7,055,765

## TRI Chemicals in Louisiana - Transfers

SUBSTANCE	CAS#	RANK	FAC	WASTE	RECYCLE	ENERGY	PTOWs	TRANSFER TOTAL
1,1,1,2-Tetrachloroethane	630-20-6	155	4	42,884	0	120,700	0	327,170
1,1,1-TRICHLOROETHANE	71-55-6	67	9	29,131	0	58	6	58,629
1,1,2,2-TETRACHLOROETHANE	79-34-5	147	6	80,821	125,530	0	0	414,310
1,1,2,2-Tetrachloro-1-fluor	354-14-3	215	1	26,387	0	0	0	52,774
1,1,2-TRICHLOROETHANE	79-00-5	124	8	316,485	6,130,076	0	0	12,894,241
1,1-DICHLORO-1-FLUOROETHANE	1717-00-6	58	3	207	0	200,914	0	402,242
1,1-DIMETHYL HYDRAZINE	57-14-7	183	2	613	0	300	0	1,826
1,1-Dichloroethane	75-34-3	116	5	24,401	0	0	0	48,802
1,2,3-TRICHLOROPROPANE	96-18-4	184	2	0	0	0	0	0
1,2,4-TRICHLOROBENZENE	120-82-1	202	1	11,136	0	0	0	22,292
1,2,4-TRIMETHYLBENZENE	95-63-6	54	35	1,763	1,578	89,348	0	191,608
1,2-BUTYLENE OXIDE	106-88-7	146	2	290	0	0	0	580
1,2-DIBROMOETHANE	106-93-4	144	1	0	0	0	0	0
1,2-DICHLORO-1,1,2-TRIFLUOR	354-23-4	78	1	0	0	0	0	0
1,2-DICHLORO-1,1-DIFLUOROET	1649-08-7	214	1	13,573	0	0	0	27,146
1,2-DICHLOROBENZENE	95-50-1	139	2	5,935	0	23	0	12,096
1,2-DICHLOROETHANE	107-06-2	50	19	1,170,381	8,201,497	37	0	18,744,375
1,2-DICHLOROETHYLENE	540-59-0	148	2	2,583	0	0	0	5,166
1,2-DICHLOROPROPANE	78-87-5	131	3	120	0	0	0	240
1,2-PHENYLENEDIAMINE	95-54-5	186	1	3,671	0	0	0	7,342
1,3-BUTADIENE	106-99-0	53	20	3,000,015	9,421,686	247,844	0	25,339,340
1,3-DICHLORO-1,1,2,2,3-PENT	507-55-1	103	1	0	0	0	0	0
1,3-DICHLOROPROPYLENE	542-75-6	150	2	220	0	0	0	440
1,4-DICHLORO-2-BUTENE	764-41-0	136	1	124,000	0	0	0	248,000
1,4-DIOXANE	123-91-1	114	5	0	0	17,872	0	35,821
1-CHLORO-1,1,2,2-TETRAFLUOR	354-25-6	204	1	0	0	0	0	0
1-CHLORO-1,1-DIFLUOROETHANE	75-68-3	77	2	81,510	0	0	0	163,020
2,2-DICHLORO-1,1,1-TRIFLUOR	306-83-2	117	3	4,501	0	0	0	9,002
2,3-DICHLOROPROPENE	78-88-6	189	1	0	0	0	0	0
2,4-D	94-75-7	105	1	0	0	0	0	0
2,4-DIAMINOTOLUENE	95-80-7	223	1	162,187	0	0	0	378,436
2,4-DIMETHYLPHENOL	105-67-9	212	1	0	0	0	0	0
2,4-DINITROPHENOL	51-28-5	230	2	0	0	0	0	0
2,6-XYLIDINE	87-62-7	185	2	0	0	0	0	0
2-CHLORO-1,1,1,2-TETRAFLUOR	2837-89-0	134	2	0	0	0	0	0
2-CHLORO-1,1,1-TRIFLUOROETH	75-88-7	133	1	0	0	0	0	0
2-ETHOXYETHANOL	110-80-5	250	1	0	0	0	0	0
2-MERCAPTOBENZOTHAZOLE	149-30-4	92	1	660	0	716,000	0	1,433,320
2-METHOXYETHANOL	109-86-4	143	4	0	0	77,562	0	155,124
2-METHYLLACTONITRILE	75-86-5	180	2	0	0	0	0	0
2-METHYLPYRIDINE	109-06-8	245	1	0	0	12	0	24
2-NITROPHENOL	88-75-5	201	2	0	0	0	0	0
2-NITROPROPANE	79-46-9	118	1	31,106	0	0	0	62,212
3,3-DICHLORO-1,1,1,2,2-PENT	422-56-0	107	1	0	0	0	0	0
4,4'-ISOPROPYLIDENEDIPHENOL	80-05-7	128	8	0	0	0	0	7,460
4,4'-METHYLENEDIANILINE	101-77-9	96	2	18,950	0	0	0	38,020
4,6-DINITRO-O-CRESOL	534-52-1	206	1	0	0	990	0	1,980
4-AMINOAZOBENZENE	60-09-3	196	1	74	0	0	0	148
4-AMINOBIHENYL	92-67-1	225	1	812	0	0	0	1,624
4-NITROPHENOL	100-02-7	182	1	2,000	0	0	0	4,000
ACETALDEHYDE	75-07-0	22	19	1,469	0	55,762	0	114,653
ACETAMIDE	60-35-5	79	1	0	0	0	0	0
ACETONITRILE	75-05-8	6	7	101	0	13,018	0	26,238
ACROLEIN	107-02-8	153	2	0	0	0	0	0
ACRYLAMIDE	79-06-1	20	2	15,098	0	0	0	32,251
ACRYLIC ACID	79-10-7	12	9	447,270	1	69	0	898,680

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SUBSTANCE	CAS#	RANK	FAC	WASTE	RECYCLE	ENERGY	PTOWs	TRANSFER TOTAL
ACRYLONITRILE	107-13-1	27	7	12	0	97	0	503
ALLYL ALCOHOL	107-18-6	65	7	1,700	0	0	0	3,400
ALLYL CHLORIDE	107-05-1	94	5	1	68,000	638,453	0	1,412,908
ALLYLAMINE	107-11-9	221	1	0	0	0	0	0
ALUMINUM (FUME OR DUST)	7429-90-5	83	3	0	0	2,300	0	4,626
AMETRYN	834-12-8	200	1	0	0	0	0	0
AMMONIA	7664-41-7	2	82	336,339	0	270	0	753,158
ANILINE	62-53-3	26	10	54,690	0	130,081	0	369,812
ANTHRACENE	120-12-7	145	7	1,535	0	0	0	3,236
ANTIMONY COMPOUNDS	N010	97	8	250	113,486	0	0	234,789
ARSENIC	7440-38-2	219	3	35,189	0	0	0	70,378
ARSENIC COMPOUNDS	N020	106	7	0	0	0	1	7
ASBESTOS (FRIABLE)	1332-21-4	32	11	0	0	0	0	234,946
ATRAZINE	1912-24-9	110	2	0	0	0	0	10,866
Acetophenone	98-86-2	208	1	83	0	0	0	166
BARIUM COMPOUNDS	N040	10	18	64	0	5,434	0	43,945
BENZENE	71-43-2	25	49	80,582	12,020	94,055	0	380,100
BENZOYL CHLORIDE	98-88-4	213	2	899	0	0	0	1,798
BENZYL CHLORIDE	100-44-7	205	3	150	0	0	0	300
BIPHENYL	92-52-4	135	6	1,127	0	0	0	2,254
BIS(2-CHLORO-1-METHYLETHYL)	108-60-1	165	1	0	0	0	0	0
BIS(2-CHLOROETHYL) ETHER	111-44-4	199	4	338,260	160,313	4	0	997,155
BIS(CHLOROMETHYL) ETHER	542-88-1	229	1	0	0	0	0	0
BORON TRIFLUORIDE	772-7637	240	2	0	0	0	0	0
BROMINE	7726-95-6	176	5	10	0	0	0	20
BROMOMETHANE	74-83-9	141	1	0	0	0	0	0
BUTYL ACRYLATE	141-32-2	138	4	23	0	672,547	0	1,345,140
BUTYRALDEHYDE	123-72-8	172	1	0	0	0	0	0
CADMIUM	7440-43-9	241	1	10,575	0	0	0	21,150
CADMIUM COMPOUNDS	N078	125	2	0	21	0	0	65
CARBOFURAN	1563-66-2	190	1	8,686	0	0	0	17,372
CARBON DISULFIDE	75-15-0	35	10	135	0	6,279	0	12,889
CARBON TETRACHLORIDE	56-23-5	101	10	21,501	1,032	79	0	45,225
CARBONYL SULFIDE	463-58-1	57	7	0	0	0	0	0
CATECHOL	120-80-9	142	10	0	0	1	0	7
CHLORDANE	57-74-9	122	1	0	0	0	0	0
CHLORINE	7782-50-5	38	80	418	0	0	17,035	1,090
CHLORINE DIOXIDE	10049-04-4	104	6	0	0	0	0	0
CHLOROACETIC ACID	79-11-8	198	1	0	0	0	0	0
CHLOROBENZENE	108-90-7	48	10	1,822,805	412,202	2,327,175	0	9,124,738
CHLORODOFLUOROMETHANE	75-45-6	21	9	0	34,531	0	0	69,062
CHLOROETHANE	75-00-3	112	12	73,158	0	0	0	146,316
CHLOROFORM	67-66-3	41	13	74,485	1	165	0	149,342
CHLOROMETHANE	74-87-3	45	11	0	0	1,107	0	2,214
CHLOROPRENE	126-99-8	40	2	57,000	0	0	0	114,000
CHLOROTHALONIL	1897-45-6	236	1	0	0	0	0	0
CHLOROTRIFLUOROMETHANE	75-72-9	126	1	0	0	0	0	0
CHROMIUM	7440-47-3	130	15	1,716	540,798	0	13	1,085,958
CHROMIUM COMPOUNDS	N090	69	23	429	790,990	30	9	1,618,167
COBALT	7440-48-4	187	2	1	8,966	0	0	18,514
COBALT COMPOUNDS	N096	86	14	0	145,027	0	0	314,870
COPPER	7440-50-8	149	13	21,000	39,116	0	31	165,870
COPPER COMPOUNDS	N100	44	29	34,040	3,498,471	0	114	7,248,242
CREOSOTE	8001-58-9	81	3	16,713	0	0	1,247	57,009
CRESOL (MIXED ISOMERS)	1319-77-3	99	7	1	0	13	0	83
CUMENE	98-82-8	82	11	37	0	350	0	779
CUMENE HYDROPEROXIDE	80-15-9	137	1	20	0	0	0	40
CYANIDE COMPOUNDS	N106	30	5	3,360	0	2,185	0	11,102
CYCLOATE	1134-23-2	195	1	0	0	0	0	0

SUBSTANCE	CAS#	RANK	FAC	WASTE	RECYCLE	ENERGY	PTOWs	TRANSFER TOTAL
CYCLOHEXANE	110-82-7	36	29	53,121	2,684	104,254	0	320,121
DECABROMODIPHENYL OXIDE	1163-19-5	49	1	0	0	0	0	0
DI(2-ETHYLHEXYL) PHTHALATE	117-81-7	217	3	120	0	6,490	0	13,243
DIAMINOTOLUENE (MIXED ISOME	25376-45-8	109	3	257,111	1,703	99,000	0	727,944
DIAZINON	333-41-5	232	1	0	0	0	0	0
DIBENZOFURAN	132-64-9	193	2	0	0	0	0	0
DIBUTYL PHTHALATE	84-74-2	237	2	1	0	30,622	0	61,246
DICHLOROBENZENE (MIXED ISOM	25321-22-6	191	2	6,700	0	0	0	13,408
DICHLOROBROMOMETHANE	75-27-4	156	1	0	0	0	0	0
DICHLORODIFLUOROMETHANE (CF	75-71-8	70	8	0	89,500	0	0	179,000
DICHLOROMETHANE	75-09-2	90	11	8,599	0	81	0	19,596
DICHLOROTETRAFLUOROETHANE (	76-14-2	98	2	33,458	0	0	1,468	66,916
DICHLOROTRIFLUOROETHANE	34077-87-7	166	1	0	0	0	11,316	0
DICYCLOPENTADIENE	77-73-6	80	8	8,780	0	7,334	0	32,751
DIETHANOLAMINE	111-42-2	71	15	0	0	79,223	0	207,286
DIISOCYANATES	N120	28	15	29,467	4,102	41,945	0	152,733
DIMETHYL PHTHALATE	131-11-3	248	2	0	0	0	0	0
DIMETHYLAMINE	124-40-3	140	6	3,218	0	0	0	6,536
DINITROBUTYL PHENOL	88-85-7	178	2	0	0	0	0	0
DINITROTOLUENE (MIXED ISOME	25321-14-6	93	5	52,371	570	0	0	107,284
DIPHENYLAMINE	122-39-4	119	5	12,862	0	680,794	750	1,402,012
EPICHLOROHYDRIN	106-89-8	89	7	3,102	0	68,305	0	144,014
ETHYL ACRYLATE	140-88-5	132	2	216,781	0	62,754	0	559,070
ETHYL DIPROPYLTHIOCARBAMATE	759-94-4	158	1	0	0	0	0	0
ETHYLBENZENE	100-41-4	47	51	5,085	16,258	187,843	0	419,703
ETHYLENE	74-85-1	9	51	770,018	0	37	0	1,540,110
ETHYLENE GLYCOL	107-21-1	29	37	37,982	71,503	23,590	0	292,139
ETHYLENE OXIDE	75-21-8	75	9	267	0	0	0	689
FENBUTATIN OXIDE	13356-08-6	170	1	0	0	0	0	0
FENOXYCARB	72490-01-8	243	1	0	0	0	0	1
FLUOMETURON	2164-17-2	235	1	0	0	0	0	0
FLUORINE	7782-41-4	168	1	0	0	0	0	0
FORMALDEHYDE	50-00-0	5	38	88,032	0	0	5	176,313
FORMIC ACID	64-18-6	18	14	11,000	0	27,327	2	78,654
FREON 113	76-13-1	62	2	17,985	0	0	0	35,970
GLYCOL ETHERS	N230	64	33	31,974	0	97,559	0	259,066
HEXACHLORO-1,3-BUTADIENE	87-68-3	161	4	162,024	0	0	42	324,558
HEXACHLOROBENZENE	118-74-1	188	4	6,944	0	0	88	13,968
HEXACHLOROETHANE	67-72-1	174	4	49,990	0	0	0	99,980
HYDRAZINE	302-01-2	154	5	143	0	0	0	311
HYDRAZINE SULFATE	10034-93-2	59	1	0	0	0	0	0
HYDROCHLORIC ACID	7647-01-0	11	57	5,457	0	0	0	10,914
HYDROGEN CYANIDE	74-90-8	100	4	0	0	0	0	0
HYDROGEN FLUORIDE	7664-39-3	33	19	4,877	0	0	0	9,754
HYDROQUINONE	123-31-9	73	4	36,018	0	201	0	72,503
ISOBUTYRALDEHYDE	78-84-2	207	1	0	0	0	0	0
ISOPROPYL ALCOHOL	67-63-0	151	2	0	0	0	0	0
LEAD	7439-92-1	171	3	11,310	409,801	0	0	842,222
LEAD COMPOUNDS	N420	46	8	4	7,001,439	0	0	14,037,305
M-XYLENE	108-38-3	95	6	0	0	0	0	0
MALEIC ANHYDRIDE	108-31-6	61	10	27,159	0	96,498	0	247,364
MANGANESE	7439-96-5	13	19	2,261	1,134,439	0	87,772	2,278,528
MANGANESE COMPOUNDS	N450	15	18	0	1	0	0	1,594
MERCURY	7439-97-6	157	2	779	5,806	0	0	13,225
MERCURY COMPOUNDS	N458	222	1	0	0	0	0	0
METHANOL	67-56-1	3	89	421,829	29,098	191,373	54	1,313,967
METHYL ACRYLATE	96-33-3	88	4	0	0	1,268	286	2,536
METHYL ETHYL KETONE	78-93-3	23	38	67,311	16	901,989	120,000	1,938,754
METHYL ISOBUTYL KETONE	108-10-1	55	15	1,441	0	83,000	0	212,429

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SUBSTANCE	CAS#	RANK	FAC	WASTE	RECYCLE	ENERGY	PTOWs	TRANSFER TOTAL
METHYL ISOTHIOCYANTE	556-61-6	228	1	0	0	0	0	0
METHYL METHACRYLATE	80-6206	66	3	0	290	33,968	0	68,666
METHYL ERT-BUTYL ETHER	1634-04-4	51	16	35	344	7	0	772
MOLYBDENUM TRIOXIDE	1313-27-5	63	15	0	487,307	0	0	1,147,290
MONOCHLOROPENTAFLUOROETHANE	76-15-3	127	1	0	36,230	0	0	72,460
Methacrylonitrile	126-98-7	246	1	0	0	0	0	0
N,N-Dimethylformamide	68-12-2	76	4	112	0	390	0	2,214
N-BUTYL ALCOHOL	71-36-3	31	23	1	100	92,217	87,772	184,636
N-Methyl-2-pyrrolidone	872-50-4	68	8	27,600	0	320,000	0	724,327
N-NITROSODIPHENYLAMINE	86-30-6	216	2	0	0	340,000	0	680,000
NAPHTHALENE	91-20-3	56	38	45,738	60,211	192,661	0	601,040
NICKEL	7440-02-0	129	13	3,264	287,488	0	54	582,154
NICKEL COMPOUNDS	N495	42	35	409	361,556	299	286	898,492
NITRATE COMPOUNDS	N511	4	37	350,200	0	0	120,000	703,350
NITRIC ACID	7697-37-2	7	17	349	0	0	0	698
NITRILOTRIACETIC ACID	139-13-9	160	2	0	0	0	0	0
NITROBENZENE	98-95-3	52	5	247,644	0	16,228	0	534,983
NORFLURAZON	27314-13-2	233	1	0	0	0	0	0
O-CRESOL	95-48-7	224	1	0	0	0	0	0
O-TOLUIDINE	95-53-4	123	3	41,776	2,267	0	0	88,092
O-XYLENE	95-47-6	120	5	7,649	0	3,200	0	21,698
OZONE	10028-15-6	203	3	0	0	0	0	0
P-CRESOL	106-44-5	152	3	91	0	11,007	0	22,196
P-NITROSODIPHENYLAMINE	156-10-5	244	1	0	0	0	0	0
P-PHENYLENEDIAMINE	106-50-3	177	2	12,000	0	0	0	24,000
P-XYLENE	106-42-3	85	3	0	0	0	0	0
PENTACHLOROPHENOL	87-86-5	210	1	9	0	0	2	39
PERACETIC ACID	79-21-0	173	1	0	0	0	0	0
PERMETHRIN	52645-53-1	159	2	0	0	0	0	16,538
PHENANTHRENE	85-01-8	197	1	100	0	0	0	870
PHENOL	108-95-2	43	33	190,645	974	366	0	409,118
PHOSGENE	75-44-5	179	4	1,048	0	0	0	2,096
PHOSPHORIC ACID	7664-38-2	1	58	7,698	146,225	3,510	1,684	314,866
PHOSPHORUS (YELLOW OR WHITE)	7723-14-0	209	1	0	0	0	0	0
PHTHALIC ANHYDRIDE	85-44-9	113	3	59,017	0	2,300,947	0	4,720,268
PICRIC ACID	88-89-1	226	2	0	0	0	0	0
PIPERONYL BUTOXIDE	51-03-6	231	2	0	0	0	0	0
POLYCYCLIC AROMATIC COMPOUN	N590	87	7	153	33,655	68	0	72,469
PROMETRYN	7287-19-6	242	1	0	0	0	0	0
PROPARGITE	2312-35-8	234	1	0	0	0	0	0
PROPARGYL ALCOHOL	107-19-7	218	1	0	0	0	0	0
PROPICONAZOLE	60207-90-1	227	1	0	0	0	0	0
PROPIONALDEHYDE	123-38-6	175	2	0	0	7	0	14
PROPYLENE	115-07-1	17	34	2,600,034	0	0	0	5,200,068
PROPYLENE OXIDE	75-56-9	102	6	17	0	0	1,375	34
PYRIDINE	110-86-1	121	5	17	0	0	0	34
Paraldehyde	123-63-7	249	1	0	0	7	0	14
Pentachloroethane	76-01-7	169	3	86,540	0	0	0	173,080
QUINOLINE	91-22-5	192	2	0	0	0	0	0
QUINTOZENE	82-68-8	238	1	0	0	0	0	0
SEC-BUTYL ALCOHOL	78-92-2	60	12	1,325	0	660,814	0	1,324,758
SELENIUM	7782-49-2	239	1	0	0	0	0	0
SELENIUM COMPOUNDS	N725	211	1	6,052	0	0	0	16,856
SILVER	7440-22-4	194	2	0	172,721	0	0	345,501
SILVER COMPOUNDS	N740	220	2	0	24,000	0	0	48,019
SIMAZINE	122-34-9	163	1	0	0	0	0	3,747
SODIUM DIMETHYLDITHIOCARBAM	128-04-1	247	1	0	0	0	0	0
SODIUM NITRITE	7632-00-0	34	7	227,600	0	0	0	455,286
STYRENE	100-42-5	39	33	3,485	12,438	407,797	0	1,056,089

SUBSTANCE	CAS#	RANK	FAC	WASTE	RECYCLE	ENERGY	PTOWs	TRANSFER TOTAL
SULFURIC ACID	7664-93-9	16	38	0	160	0	0	320
TERY-BUTYL ALCOHOL	75-65-0	164	5	2,940	0	590,518	0	1,186,921
TETRACHLOROETHYLENE	127-18-4	84	18	174,637	324,742	0	0	1,004,287
TITANIUM TETRACHLORIDE	7550-45-0	162	3	139,287	0	0	0	278,804
TOLUENE	108-88-3	14	95	479,071	85,278	1,426,141	0	4,000,693
TOLUENEDIISOCYANATE (MIXED	26471-62-5	181	5	142,937	0	2,009,096	0	4,322,881
TRANS-1,3-DICHLOROPROPENE	10061-02-6	167	1	0	0	0	0	0
TRICHLOROETHYLENE	79-01-6	72	13	26,238	4,048	0	0	62,078
TRICHLOROFLUOROMETHANE (CFC	75-69-4	91	4	0	0	0	0	0
Triethylamine	121-44-8	111	4	53,989	0	63	0	108,104
VINYL ACETATE	108-05-4	37	6	1,101	0	96,074	0	194,350
VINYL CHLORIDE	75-01-4	74	10	647	0	250	0	1,812
VINYLDENE CHLORIDE	75-35-4	108	4	351	0	946	0	2,597
XYLENE (MIXED ISOMERS)	1330-20-7	24	79	84,582	21,711	580,313	2	1,384,408
ZINC (FUME OR DUST)	7440-66-6	115	10	106,628	579,652	0	0	1,372,560
ZINC COMPOUNDS	N982	19	52	14,380	1,614,907	502	252	3,358,144
n-Hexane	110-54-3	8	40	150,281	1,707	1,814,061	0	3,933,492